HCD-H7/H1500

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
HCD-H1500

AEP Model
E Model
HCD-H7

HCD-H7 and HCD-H1500 are the tuner, deck, CD and amplifier section in FH-B7CD and MHC-1500 respectively.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

photo : HCD-H7

SPECIFICATIONS

Tuner Section

System	FM stereo, FM/AM superheterodyne tuner
FM tuner section	
Tuning range	87.5 – 108 MHz
Antenna	Telescopic antenna
Antenna terminals	75 ohms unbalanced
Intermediate frequency	10.7 MHz
AM tuner section	
Tuning range	For US, Canadian MW: 530 - 1,710 kHz For AEP, WG and UK MW: 531 - 1,602 kHz LW: 153 - 279 kHz For IT MW: 522 - 1,611 kHz LW: 144 - 288 kHz For other countries MW: 531 - 1,602 kHz SW: 5.95 - 17.9 MHz
Antenna	AM loop antenna, External antenna terminals
Intermediate frequency	450 kHz

Amplifier Section

Audio Power Specification (US model)
POWER OUTPUT AND TOTAL HARMONIC DISTORTION:
With 6-ohm load, both channels driven, form 80-20,000Hz, rated 18 watts per channel minimum RMS power, with no more than 1% total harmonic distortion from 250 milliwatts to rated output.

CD Section	Model Name Using Similar Mechanism		CDP-S37/S207
	CD Mechanism Name		CDM13A-5BD3
	Base Unit Name		BU-5BD3
DECK Section	Model Name Using Similar Mechanism		HST-616
	Tape Transport Mechanism Type	DECK A	TCM-170RA1
		DECK B	TCM-170RB7

Other specifications

Continuous RMS power output	25 + 25 watts (6 ohms at 1 kHz, 5% THD)
Peak music power output (for the models other than AEP, WG, IT and UK)	240 watts (6 ohms)
Inputs	MIX MIC (minijack): sensitivity 1 mV, impedance 600 ohms For AEP, WG, IT and UK PHONO (phono jacks): sensitivity 5 mV, impedance 47 kiloohms For other countries AUX/VIDEO (phono jacks): sensitivity 450 mV, impedance 50 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more. SPEAKER: accepts speakers of 6 to 16 ohms.

— continued on next page —

COMPACT DISC DECK RECEIVER

SONY®

使用時は添付資料も参照のこと
Refer to the additional documents.

Cassette Deck Section

Recording system	4-track 2-channel stereo
Frequency response	(DOLBY NR OFF) 40 – 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S) 40 – 14,000 Hz (±3 dB), using TYPE II cassette
Wow and flutter	0.1% WRMS ±0.3% (DIN)

General

Power requirements	US, Canadian model: 120V AC, 60Hz AEP, WG, IT model: 220V, 50/60Hz UK model: 240V, 50Hz E, EA, AUS model: 110–120V or 220–240V AC adjustable, 50/60Hz
Power consumption	US model: 80 watts Canadian model: 110 watts AEP, WG, IT model: 90 watts UK model: 160watts E, EA, AUS model: 90 watts
Dimensions	Approx. 225×285×260mm (w/h/d) incl. projecting parts and controls
Weight	Approx. 5.8kg

Design and specifications subject to change without notice.

- WG : West Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS : Australian model

TABLE OF CONTENTS

Section *Title* *Page*

1. SERVICING NOTES 3

2. GENERAL

2-1. Parts Identifications 6

3. DISASSEMBLY

3-1. Case 9
3-2. Power Block 9
3-3. Main Board 9
3-4. CD Mechanism Block 10
3-5. TC Mechanism Block 10
3-6. Display, SW, Jack, VR Board 10

4. MECHANICAL ADJUSTMENTS 11

5. ELECTRICAL ADJUSTMENTS 11

6. DIAGRAMS

6-1. Semiconductor Lead Layouts 17
6-2. Circuit Boards Location 18
6-3. Printed Wiring Boards —Tuner/Deck/CD Section— 20
6-4. Schematic Diagram—Tuner/Deck Section— 25
6-5. Schematic Diagram —Power/Amplifier/Display Section— 29
6-6. Printed Wiring Boards —Power/Amplifier/Display Section— 33
6-7. Schematic Diagram—CD Section— 36
6-8. Pin Functions 43

7. EXPLODED VIEWS

7-1. Case, Power Section 49
7-2. Front Panel, Main Board Section 50
7-3. MD Chassis Section 51
7-4. Mechanism Deck Section (1) 52
7-5. Mechanism Deck Section (2) 53
7-6. CD Section (1) 54
7-7. CD Section (2) 55

8. ELECTRICAL PARTS LIST 56

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

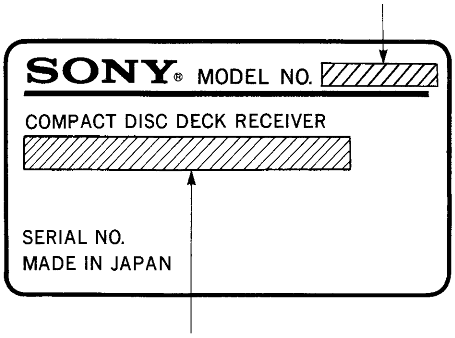
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTES

MODEL IDENTIFICATION

— Specification Labels —

IT model only: FH-B7CD
Except for IT model: HCD-H7
HCD-H1500



US model: AC: 120V~60Hz 80W
Canadian model: AC: 120V~60Hz 110W
AEP, WG model: AC: 220V~50/60Hz 90W
IT model: AC: 220V~50Hz 90W
UK model: AC: 240V~50Hz 160W
E, EA, AUS model: AC: 110–120/220–240V~50/60Hz 90W

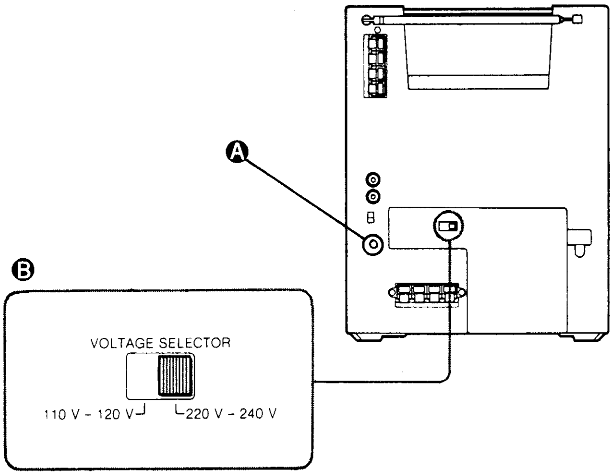
On operating voltage

Before operating the stereo system, check that the operating voltage of your system is identical with the voltage of your local power supply. Ⓐ

US, Canadian model	120V AC, 60Hz
AEP, WG, IT model	220V AC, 50/60Hz
UK model	240V AC, 50Hz
E, EA, AUS model	110–120, 220–240V AC adjustable, 50/60Hz

On operation

- If the system do not operate due to power noise, press the system reset button at the rear. The system will resume operation. Ⓑ
  At this time, the system returns to the factory-set mode. Please set the clock, timer, or store stations again.



SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

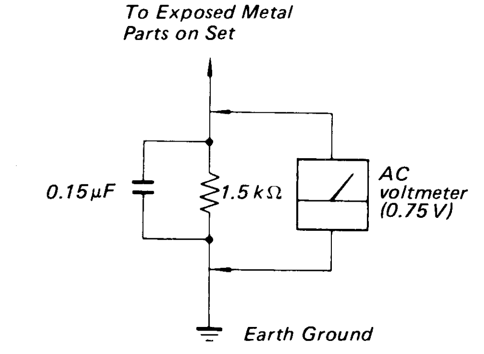
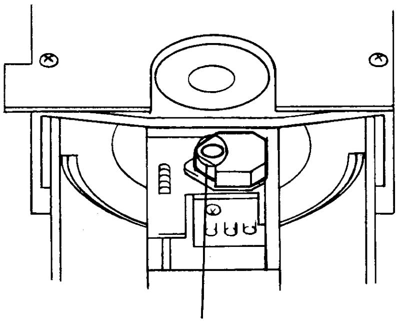


Fig. A. Using an AC voltmeter to check AC leakage.

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



➊ Confirm that laser beam is spread.

➋ Up and down motion of the objective lens. (3 times)

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

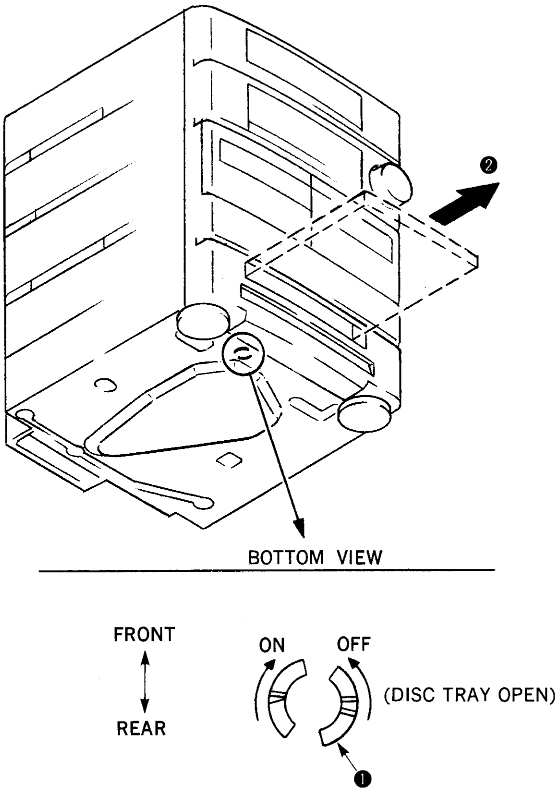
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



(1) Insert to ➊ for tapering driver, etc., and turn in the direction of arrow OFF. (Disc tray open)

(2) Tray as come out little of front panel, pull out in the direction of arrow ➋ by hand.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

> **CAUTION**
>
> Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 mm
   - Emission Duration: continuous
   - Laser Output Power: less than 44.6 μW*

     * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including APC board).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*

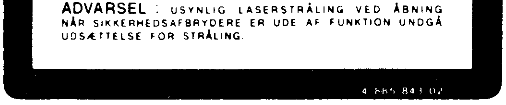
     * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning



CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.

ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING.

4 885 843 02

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

SECTION 2
GENERAL

2-1. PARTS IDENTIFICATIONS

Tuner Section A

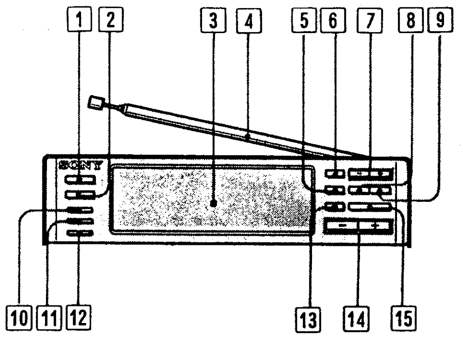
1 TIMER CONTROL button
2 SLEEP timer button
3 Display window
4 Telescopic antenna
5 AUTO tuning button
6 BAND selector
7 TUNING –/+ buttons
8 MEMORY button
9 NEXT/ENTER button
10 TIMER SET button
11 CLOCK DISPLAY button
12 CLOCK SET button
13 ST/MUTE (stereo/muting) button
14 PRESET/TIMER +/– (preset station scan/time set) buttons
15 SHIFT (memory page select) button

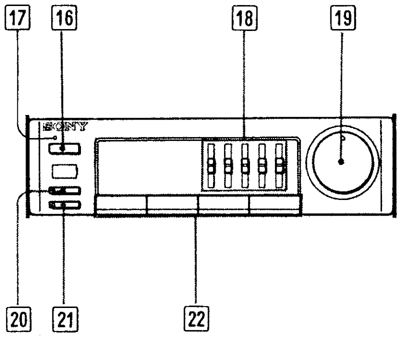
Amplifier Section B

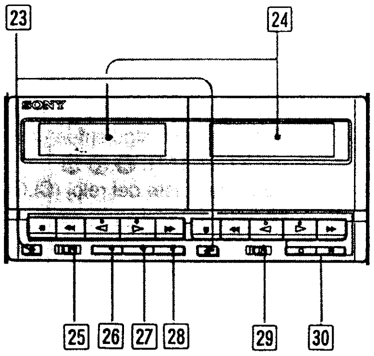
16 POWER switch
17 STANDBY indicator
It is lit as long as the AC power cord is connected to a wall outlet.
18 5-band stereo graphic equalizer and spectrum analyzer
19 VOLUME control
20 SURROUND effect button
21 DBFB (Dynamic Bass Feedback) button (for AEP, WG, IT and UK model)
SAT (Super Acoustic Turbo) button (for the model for other countries)
22 Function selectors

Cassette Deck Section C

23 EJECT button
24 Cassette holders
25 DIRECTION MODE selector
26 AMS/BLK SKIP (Automatic Music Sensor/blank skip) button
27 TAPE DUBBING HIGH SPEED button
28 CD SYNCHRO (CD synchronized recording) button
29 DOLBY NR (Dolby Noise Reduction) switch
30 Tape operation buttons
◀◀ / ▶▶: Fast winding
▷: Forward play
◁: Reverse play
■ : Stop
REC (recording)
PAUSE

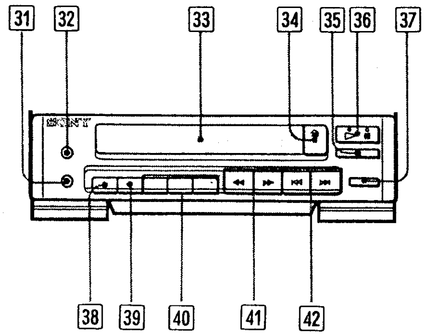






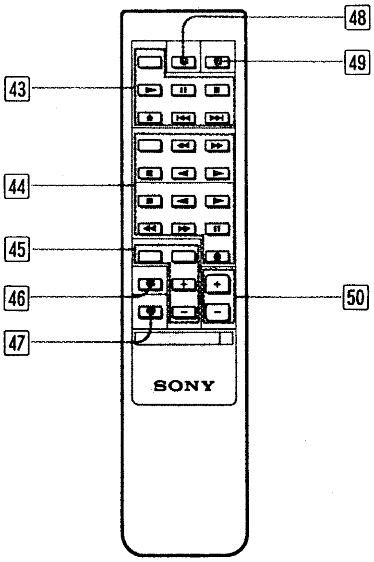
CD Player Section D

31 HEADPHONES jack (stereo minijack)
32 MIX MIC (mixing microphone) jack (minijack)
33 Disc compartment
34 ⏏ OPEN/CLOSE button
35 ■ (stop) button
36 ▷II (play/pause) button and indicator
37 EDIT button
38 TIME display selector
39 REPEAT button
40 PLAY MODE selectors
CONTINUE play button
SHUFFLE play button
PROGRAM play button
41 ◀◀ / ▶▶ (manual search) buttons
42 |◀◀ / ▶▶| (Automatic Music Sensor) buttons



Remote Commander E

43 CD player operation buttons
44 Cassette deck operation buttons
45 Tuner operation buttons
46 PHONO select button
47 VIDEO/AUX select button
48 SLEEP timer button
49 POWER switch
50 VOL (volume) +/– control buttons



Setting the Clock

Example: Set to 9:25 in the morning.
When the AC power cord is connected, the display shows:
0:00 for **AEP, WG, IT and UK model**
AM 0:00 for the model for other countries.

1 **Press CLOCK SET.**

2 **Set the hour with PRESET/TIMER +/– buttons**

3 **Press NEXT/ENTER.**

4 **Set the minute with PRESET/TIMER +/– buttons.**

5 **Press NEXT/ENTER.**
The clock starts operating.

Information on the time

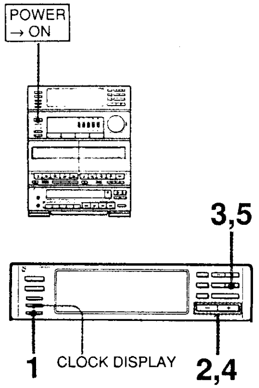
AEP, WG, IT and UK model shows the time in 24-hour cycle.
The model for other countries shows the time in 12-hour cycle.
AM 0:00 = midnight
PM 0:00 = noon

When a power interruption occurs

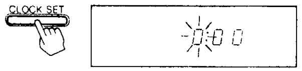
The power is backed up for approximately 5 minutes. If the power is recovered within 5 minutes, there is no need to reset the clock and timer. If it is longer than 5 minutes, both the clock and timer settings are erased, and "0:00" will flash on the display.

To check the present time while using the system

Press CLOCK DISPLAY.
The time display disappears after a few seconds.


POWER → ON
3,5
1
CLOCK DISPLAY
2,4

1


CLOCK SET
0:00

2

–PRESET/TIMER
–
+
9:00

3

NEXT
ENTER
9:00

4

–PRESET/TIMER–
–
+
9:25

5

NEXT
ENTER
9:25

Tuning in Automatically

1 **Press TUNER.**

2 **Press BAND repeatedly until the desired band appears.**
As you press BAND, the band changes as follows:
AEP, WG, IT and UK model:
FM → MW → LW

US, Canadian model:
FM→SW→AM

E, EA, AUS model:
FM → SW → MW

3 **Press AUTO.**
Make sure that AUTO appears in the display.

4 **Select the station with TUNING + or –.**

5 For receiving FM stations with the stereo effect, **press ST/MUTE so that MUTING appears.**

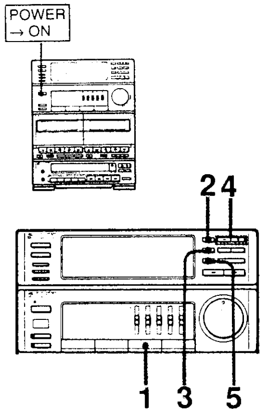
Tuning in Manually

1 **Press TUNER.**

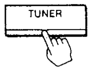
2 **Select band by pressing BAND.**

3 **Press AUTO so that AUTO disappears from the display.**

4 **Select the station with TUNING + or –.**

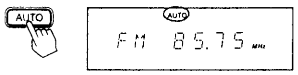

POWER → ON
24
1
3
5

1

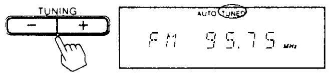


2

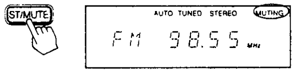
3


AUTO
AUTO
FM 85.75 MHz

4


TUNING
–
+
AUTO TUNED
FM 95.75 MHz

5


ST/MUTE
AUTO TUNED STEREO MUTING
FM 98.55 MHz

Storing Stations

1 Tune in the desired station.

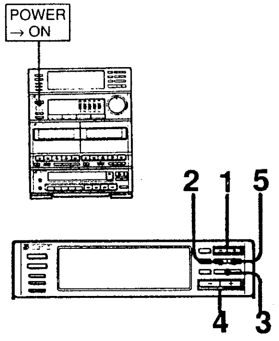
2 Press MEMORY.
MEMORY appears for several second.

3 While MEMORY is on, press SHIFT to select the memory page (A, B or C).
The memory pages (A, B or C) can be classified according to the music category, station band, etc.

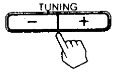
4 While MEMORY is on, press PRESET/TIMER + or – to select the number (1 to 10).

5 Press NEXT/ENTER.
MEMORY disappears, and the station is stored.

6 Repeat 1 to 5 for each stations to be stored.



1



2

MEMORY
MEMORY

3

SHIFT
MEMORY

4

PRESET/TIMER
–
+
MEMORY
5

5

NEXT
ENTER
5

If you cannot store a station successfully
Press MEMORY again so that MEMORY appears, and then proceed with the steps 3 to 5 above.
Be sure to operate while MEMORY is on (approx. 4 seconds.)

When you have selected the wrong page and number
Press MEMORY and then proceed with the above steps.

To Tune in a Preset Station

1 Press SHIFT to select the memory page.

2 Press PRESET/TIMER + or – to select the desired number.

Indicator on the display

TUNED:	Appears when a station of sufficient signal strength is tuned in.
STEREO:	Appears when an FM stereo program of sufficient signal strength is received.

When an FM stereo program is noisy or hard to receive

Press ST/MUTE so that MUTING disappears from the display.
There will be no stereo effect, but the reception will be improved.
Press again to restore the stereo effect.

Antenna adjustment

For FM reception, adjust the length and direction of the telescopic antenna.
For MW, LW, and SW reception, find the best location of the AM loop antenna.

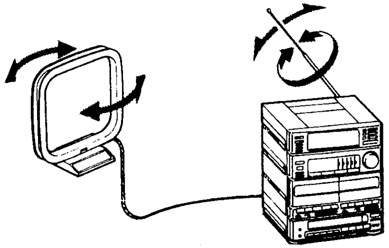
Can a previously stored station be erased?
No. Erasing only is not possible, but storing a new station erases the previous one.

Important

The stored stations remain for approximately 1 week even if no power is supplied (e.g. the power cord is disconnected, etc.). If they are erased, store the stations again.

Changing the MW tuning interval (except for AEP, WG, IT and UK model)
The MW tuning interval is preset at the factory to 9 kHz.
If you use a system where the frequency allocation system is difference from the preset interval, change the interval as follows.
1 Turn on the power.
2 Tune in any MW station.
3 Turn off the power.
4 Turn the power back on while pressing TUNING +.
To reset the interval, follow the same procedure.

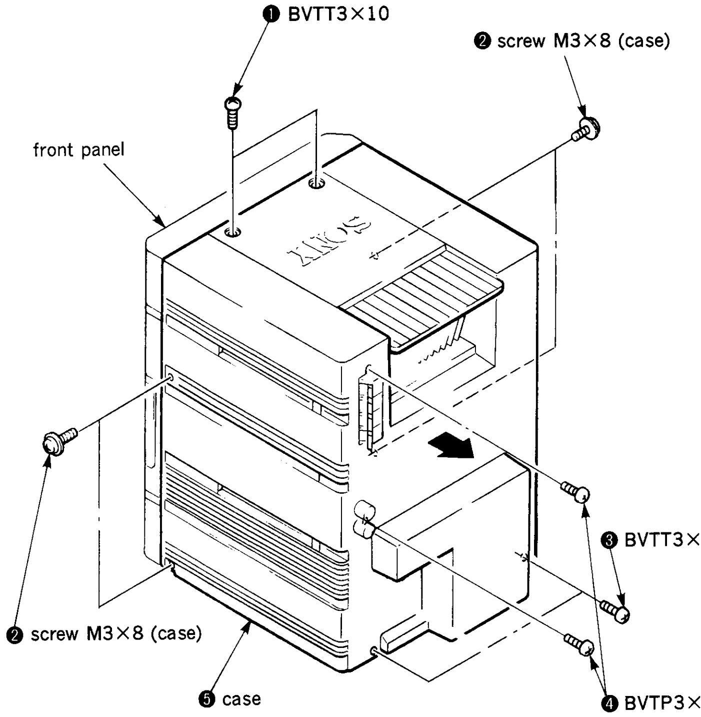
Important
When the interval is changed, stored stations will be erased from the memory.



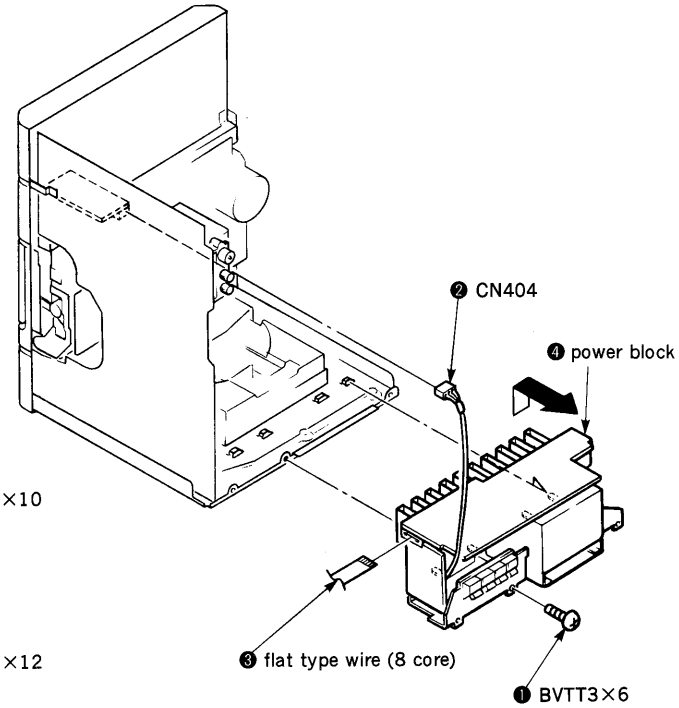
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

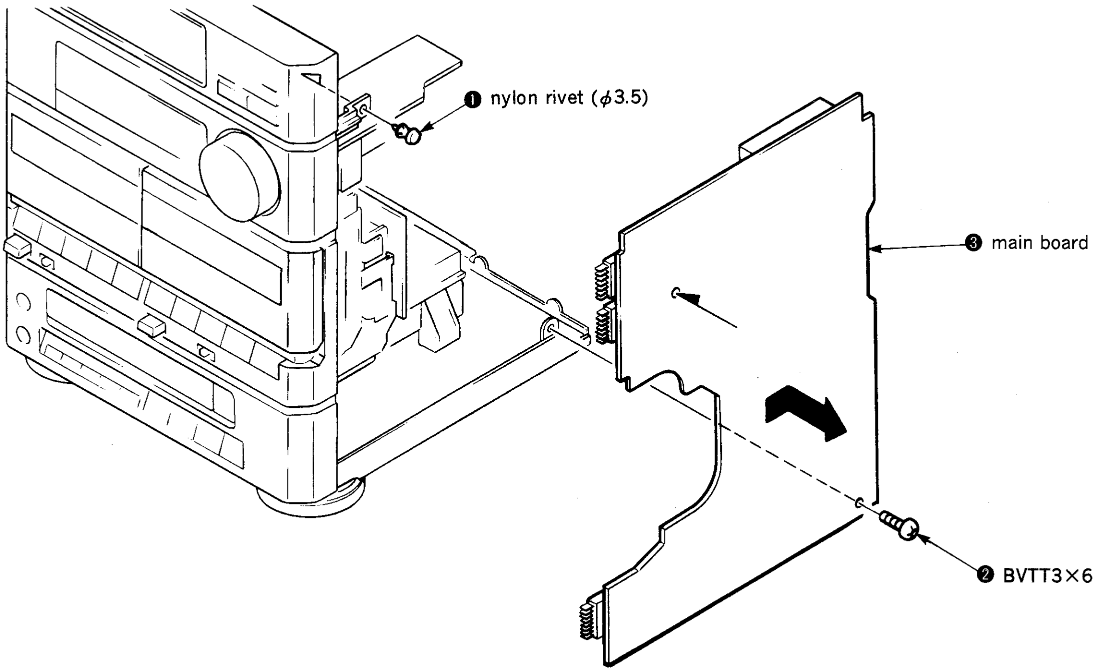
3-1. CASE


① BVTT3×10
② screw M3×8 (case)
front panel
③ BVTT3×10
② screw M3×8 (case)
⑤ case
④ BVTP3×12

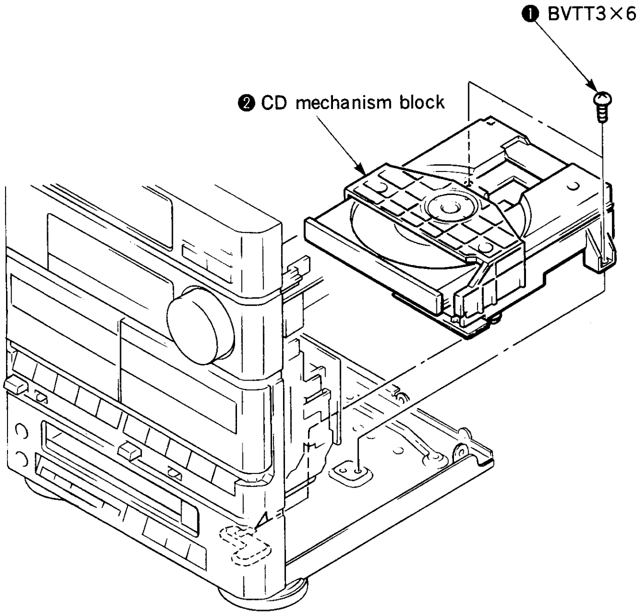
3-2. POWER BLOCK


② CN404
④ power block
③ flat type wire (8 core)
① BVTT3×6

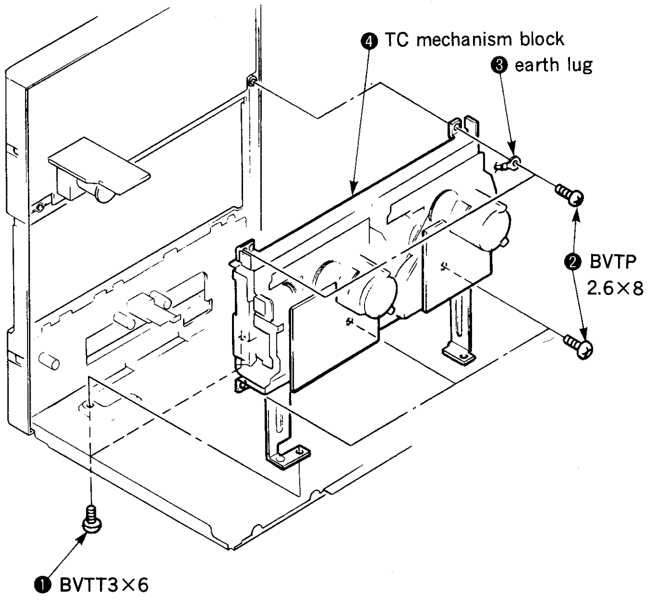
3-3. MAIN BOARD


① nylon rivet (ϕ3.5)
③ main board
② BVTT3×6

3-4. CD MECHANISM BLOCK

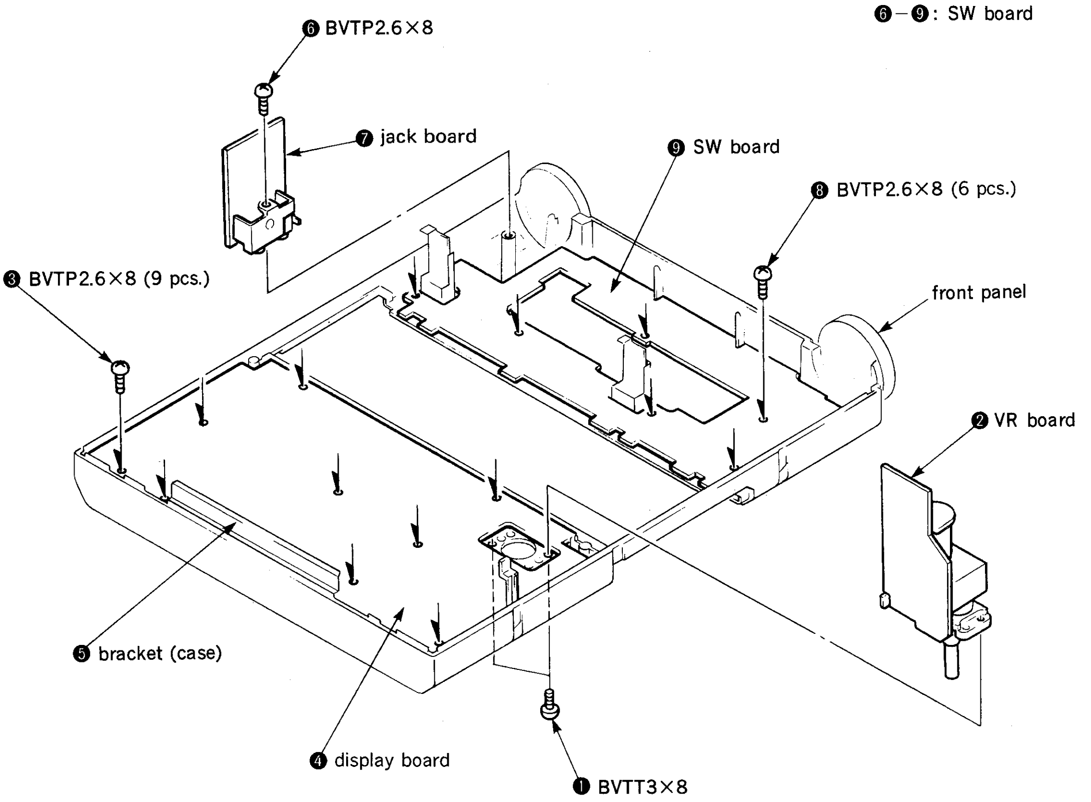

❶ BVTT3×6
❷ CD mechanism block

3-5. TC MECHANISM BLOCK


❹ TC mechanism block
❸ earth lug
❷ BVTP 2.6×8
❶ BVTT3×6

3-6. DISPLAY, SW, JACK, VR BOARD

❶–❺: display board
❻–❾: SW board


❻ BVTP2.6×8
❼ jack board
❾ SW board
❽ BVTP2.6×8 (6 pcs.)
❸ BVTP2.6×8 (9 pcs.)
front panel
❷ VR board
❺ bracket (case)
❹ display board
❶ BVTT3×8

SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belt
capstan	idler

2. Demagnetize the record/playback head with a head demagnetizer.
   (Head demagnetizer do not approach for the erase head.)
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustment should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 60g•cm (0.42 to 0.83oz•inch)
Forward back tension	CQ-102C	1 to 5g•cm (0.014 to 0.069oz•inch)
Reverse	CQ-102RB	30 to 60g•cm (0.42 to 0.83oz•inch)
Reverse back tension	CQ-102RB	1 to 5g•cm (0.014 to 0.069oz•inch)
Forward, Reverse	CQ-201B	100 to 170g•cm (1.39 to 2.36oz•inch)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch: OFF

• Test Tape

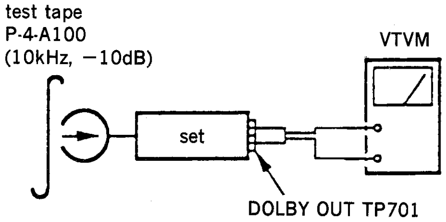
Tape	Contents	Use
P-4-A100	10kH, −10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

DECK A **DECK B**

Procedure:

1. Forward Playback Mode



• Timer Test Mode

When BAND, SHIFT and PRESET/TIMER+buttons are pressed at the same time the following time test operation is performed. After the operation, it becoms in the system reset mode. Take care that the frequency preset to the tuner is initialized.

1) POWER OFF
2) Timer set

Clock	AM10: 23
Timer ON	AM10: 24
Timer OFF	AM10: 31
Function	TUNER

3) FL tube display (FLT501)

All light
↓ for 2 seconds
"AM 10: 23"
↓ for 0.5 second
"AM 10: 24"
↓ for 0.5 second
"TUNER" ←POWER ON
↓ for 2 seconds
Last channel
↓ for 1 second
"AM 00: 00" flashing ←POWER ON

4) Finish

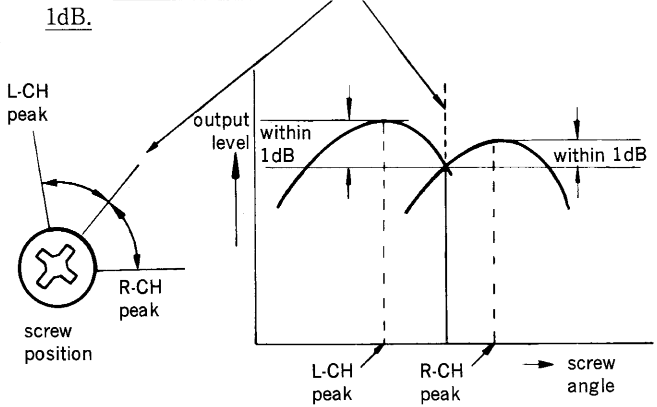
• Preset Frequency in Restting

When pressing the system reset button (S702) of the rear side of the unit, the following frequency is preset to the tuner part. When the system reset is performed in repairing, be sure to return to the frequency set by the user.

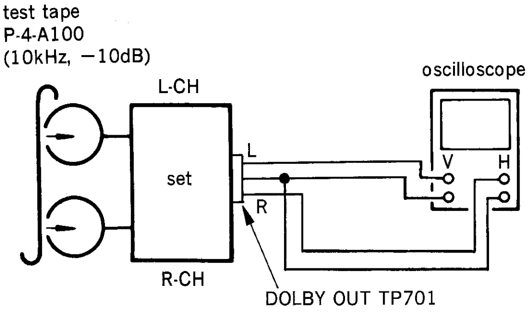
FM		US, Canadian model MW tuning interval: 10k (9k)		AEP, UK, WG, IT model ( ): Italian model			
		AM		MW		LW	
A1	87.5MHz	A6	530(531)kHz	A6	531(522)kHz	B1	153(144)kHz
A2	88.0MHz	A7	620(621)kHz	A7	603kHz	B2	162kHz
A3	98.0MHz	A8	1050(1053)kHz	A8	999kHz	B3	216kHz
A4	106.0MHz	A9	1490(1485)kHz	A9	1404kHz	B4	270kHz
A5	108.0MHz	A0	1710kHz	A0	1602(1611)kHz	B5	279(288)kHz

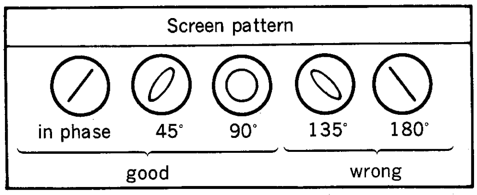
FM		E, EA, AUS model MW tuning interval: 9k (10k)			
		MW		SW	
A1	87.5MHz	A6	531(530)kHz	B1	5.95MHz
A2	88.0MHz	A7	603(620)kHz	B2	7.00MHz
A3	98.0MHz	A8	999(1050)kHz	B3	12.00MHz
A4	106.0MHz	A9	1404(1490)kHz	B4	17.00MHz
A5	108.0MHz	A0	1602(1710)kHz	B5	17.90MHz

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.


L-CH
peak
output
level
within
1dB
within 1dB
R-CH
peak
screw
position
L-CH
peak
R-CH
peak
screw
angle

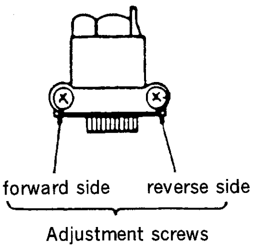
3. Playback Mode

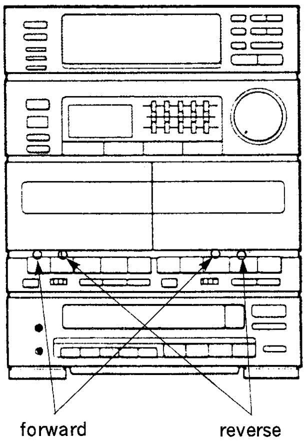

test tape
P-4-A100
(10kHz, −10dB)
L-CH
oscilloscope
set
L
V
H
R
R-CH
DOLBY OUT TP701


Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :
—record/playback head (deck A and B)

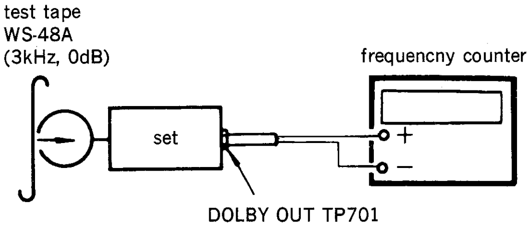

forward side
reverse side
Adjustment screws


forward
reverse

Tape Speed Adjustment DECK A DECK B

Procedure :

- Perform high speed adjustment before normal speed adjustment.
  Mode : playback


test tape
WS-48A
(3kHz, OdB)
frequencny counter
set
+
−
DOLBY OUT TP701

Speed	Test pin (TP601)	Deck	Adjustment	Frequcency counter
※High	short	A	M1 (H)	5,960 to 6,040Hz
		B	M2 (H)	
Normal	open	A	M1 (L)	2,980 to 3,020Hz
		B	M2 (L)	

※ Continue to press HIGH SPEED DUBBING switch (S312) in playback mode: High speed playback.

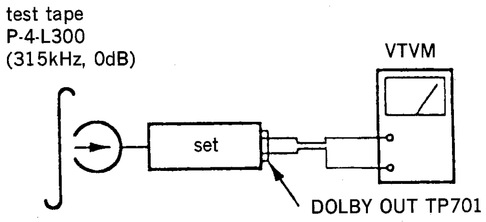
Frequency difference between the begining and the end of the tape should be within ±1.5%.

Adjustment Location : motors (M1 (deck A), M2 (deck B))

Playback Level Adjustment DECK A DECK B

Procedure :

Mode : playback


test tape
P-4-L300
(315kHz, OdB)
VTVM
set
DOLBY OUT TP701

Deck A is RV41A (L-CH) and RV61A (R-CH), deck B is RV41B (L-CH) and RV61B (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level :
LINE OUT level : −6±0.5dBm (0.37 to 0.41V)
Level Difference between Channels : within 1dB

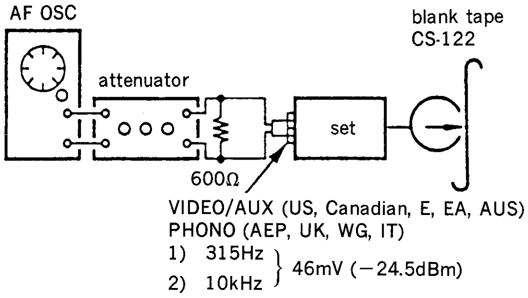
Confirm the DOLBY OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD-A and MD-B boards

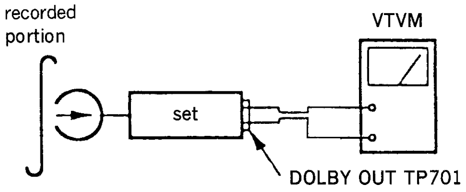
Record Bias Adjustment DECK B

Procedure:

1. record mode


AF OSC
attenuator
600Ω
set
blank tape
CS-122
VIDEO/AUX (US, Canadian, E, EA, AUS)
PHONO (AEP, UK, WG, IT)
1) 315Hz
2) 10kHz
46mV (−24.5dBm)

2. playback mode


recorded
portion
set
VTVM
DOLBY OUT TP701

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV42B (deck A) and RV62B (deck B) to repeat step 1 and 2.

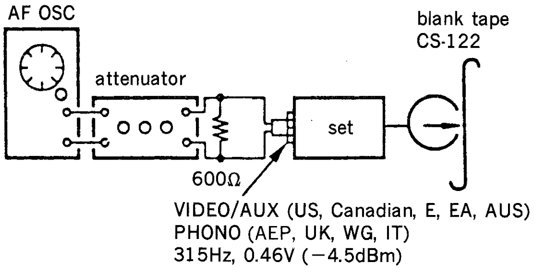
Adjustment level: Playback output of 315Hz to playback output of 10kHz: −0.5dB to 0.5dB

Adjustment Location: MD-B board

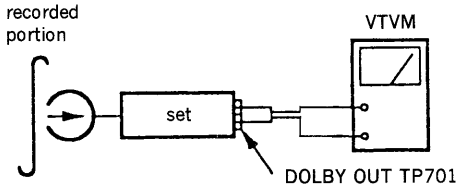
Record Level Adjustment DECK B

Procedure:

1. record mode


AF OSC
attenuator
600Ω
set
blank tape
CS-122
VIDEO/AUX (US, Canadian, E, EA, AUS)
PHONO (AEP, UK, WG, IT)
315Hz, 0.46V (−4.5dBm)

2. playback mode


recorded
portion
set
VTVM
DOLBY OUT TP701

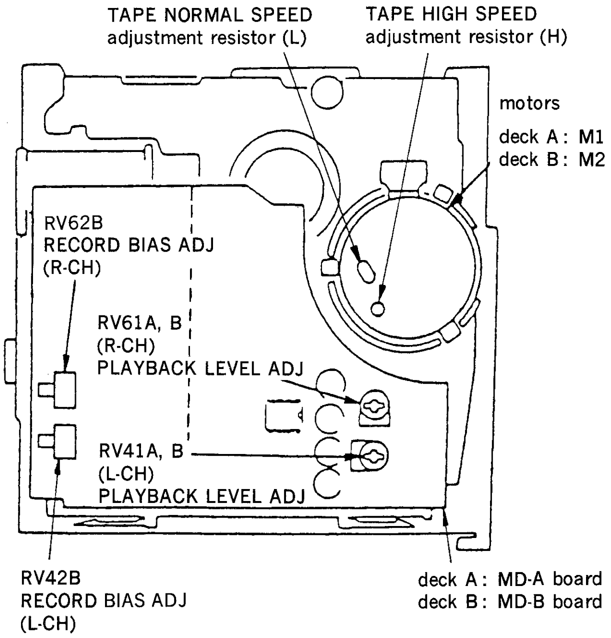
Confirm playback the signal recorded in step become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV701 (deck A) and RV751 (deck B) to repeat step 1 and 2.

Adjustment Level:
LINE OUT level: −6±0.5dBm (0.37 to 0.41V)

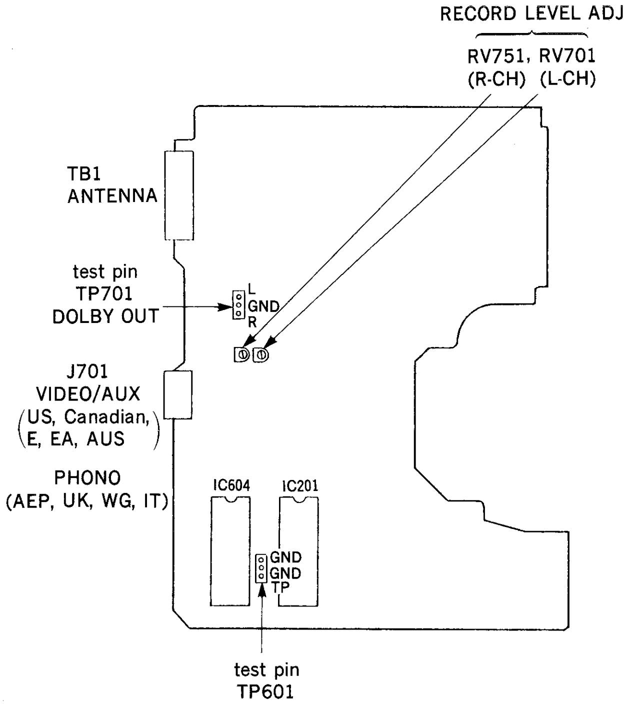
Adjustment Location: main board

Adjustment Location:

mechanism deck—rear side—


TAPE NORMAL SPEED
adjustment resistor (L)
TAPE HIGH SPEED
adjustment resistor (H)
motors
deck A: M1
deck B: M2
RV62B
RECORD BIAS ADJ
(R-CH)
RV61A, B
(R-CH)
PLAYBACK LEVEL ADJ
RV41A, B
(L-CH)
PLAYBACK LEVEL ADJ
RV42B
RECORD BIAS ADJ
(L-CH)
deck A: MD-A board
deck B: MD-B board

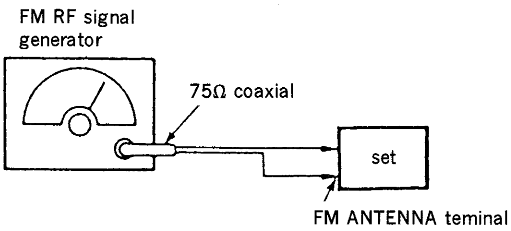
main board —component side—


RECORD LEVEL ADJ
RV751, RV701
(R-CH) (L-CH)
TB1
ANTENNA
test pin
TP701
DOLBY OUT
L
GND
R
J701
VIDEO/AUX
(US, Canadian, E, EA, AUS)
PHONO
(AEP, UK, WG, IT)
IC604
IC201
GND
GND
TP
test pin
TP601
TEST MODE

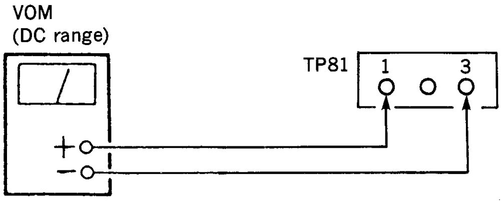
TUNER SECTION

FM SECTION ADJUSTMENTS

Setting :


FM RF signal generator
75Ω coaxial
set
FM ANTENNA teminal

Carrier frequency :	98MHz
Modulation :	1kHz, 75kHz deviation (US, Canadian, E, EA, AUS) 1kHz, 40kHz deviation (AEP, UK, WG, IT)


VOM
(DC range)
TP81
1
3
+
−

FM Discriminator Alignment (NULL Check)

Band : FM

Procedure :

1. Supply a 1mV (60dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the to 98MHz.
3. Adjust IFT82 for 0V reading on the VOM.

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

FM Tuned Indication Lighting Level Adjustment

Band : FM

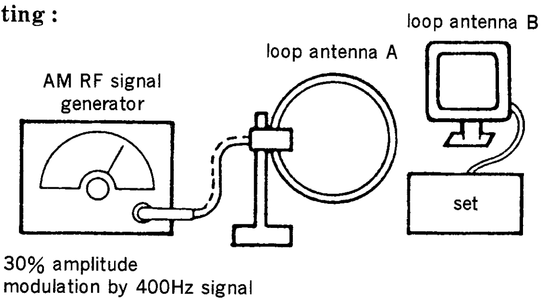
Procedure :

1. Supply a 32μV (30dBμ) 98 MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV81 so that the TUNED light up.

Adjustment Location : main board

AM SECTION ADJUSTMENTS

Setting :


loop antenna B
loop antenna A
AM RF signal generator
set
30% amplitude modulation by 400Hz signal

MW (AM) Tuned Indication Lighting Level Adjustment

Band : MW or AM

Procedure :

1. Set loop antenna A so that the loop antenna B input level becomes 0.45mV (53dBμ).
2. Tune the set to 1,490kHz (US, Canadian) or 1,404kHz (AEP, UK, WG, IT, E, EA, AUS).
3. Adjust the RV82 so that the TUNED light up.

SW OSC Voltage Adjustment (E, EA, AUS model)

Band : SW

Procedure :

1. Connect the VOM to TP (OSC).
2. Tune the set to 5.95MHz.
3. Adjust T2 for 0.9 to 1.1V reading on the VOM.
4. Tune the set to 17.90MHz.
5. Adjust CT22 for 8.3 to 8.7V reading on the VOM.

SW Tracking Adjustment (E, EA, AUS model)

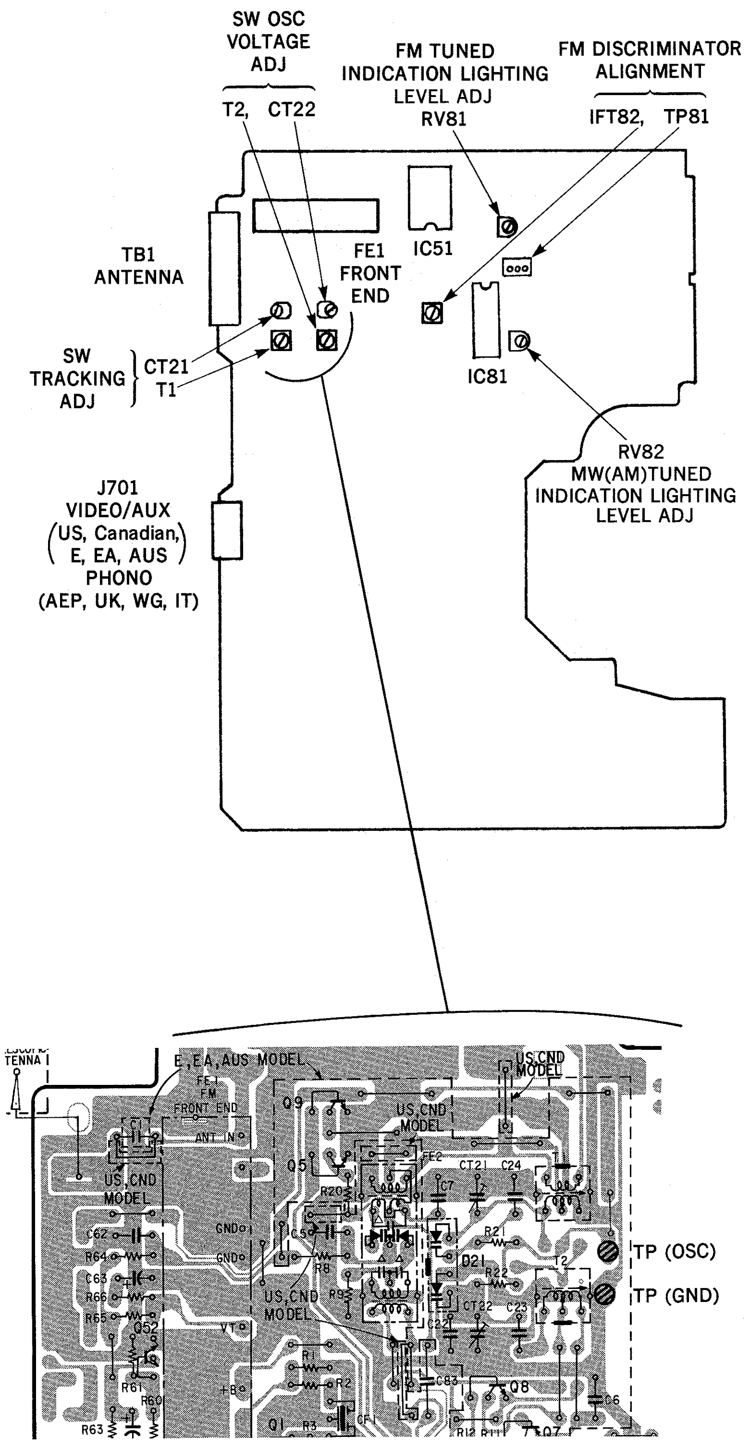
Band : SW

Procedure :

1. Connect the VOM to speaker terminal.
2. Adjust for a maximum reading on VTVM.

Signal generator and set frequency	Adjustment part
7.0MHz	T1
17.0MHz	CT21

Adjustment Location : main board —component side—

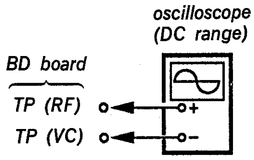

SW OSC VOLTAGE ADJ
T2, CT22
FM TUNED INDICATION LIGHTING LEVEL ADJ
RV81
FM DISCRIMINATOR ALIGNMENT
IFT82, TP81
TB1 ANTENNA
FE1 FRONT END
IC51
IC81
SW TRACKING ADJ
CT21
T1
RV82 MW(AM)TUNED INDICATION LIGHTING LEVEL ADJ
J701 VIDEO/AUX (US, Canadian, E, EA, AUS) PHONO (AEP, UK, WG, IT)
E,EA,AUS MODEL
US,CND MODEL
FRONT END
ANT IN
Q9
Q5
R20
CT21
C24
C7
R21
D21
R22
T2
CT22
C23
C22
C62
R64
C63
R66
R65
Q52
R61
R60
R63
GND
R8
R9
V1
R1
R2
+B
Q1
R3
C83
Q8
C6
R12
R11
TP (OSC)
TP (GND)

CD SECTION

1. Perform adjustments in the order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

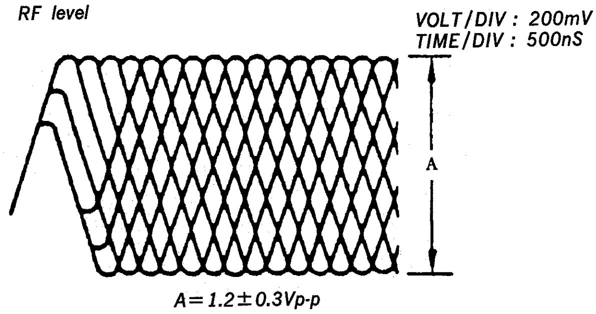
RF Level Check

Procedure :


oscilloscope (DC range)
BD board
TP (RF)
TP (VC)
+
–

1. Connect oscilloscope to test point TP (RF) and TP (VC) on BD board.
2. Confirm that RF level and eye pattern is optimum. Oputimum eye pattern means that shape "◇" can be clearly distinguished at the center of the wave form.

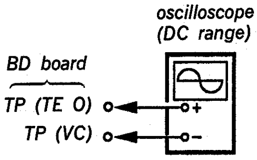
RF signal Reference Waveform (eye pattern)



REFERENCE

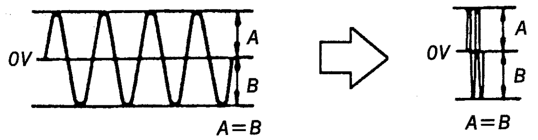
E-F Balance Check

Procedure :


oscilloscope (DC range)
BD board
TP (TE O)
TP (VC)
+
–

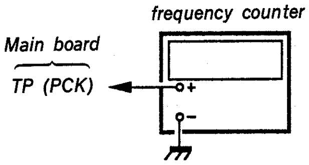
1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.
2. Connect oscilloscope to test point TP (TE O) and TP (VC) on BD board.
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V.
6. After check, remove the lead wire connected in step 1.

Note : Take sweep time as long as possible to obtain best waveform.


0V
A
B
A=B
0V
A
B
A=B

RF PLL Free-run Frequency Check

Procedure :



1. Turn POWER switch on.
2. Put disc (YEDS-18) in and playback.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.

However, this gain cas a margin, so even if it is slightly off. there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is the point where both are satisfied.

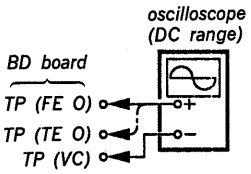
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

Gain / Symptoms	Focus	Tracking
• The time until music starts becmes longer for STOP →▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP →▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

—Primary Adjustment—

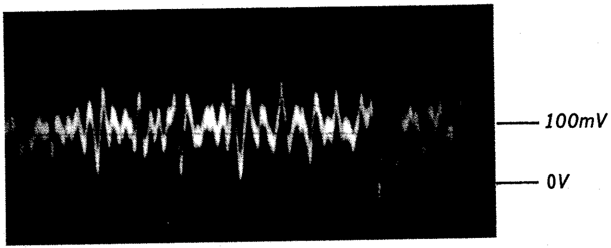
Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment.
If the positions after the primary adjustment are only a little different, returs the controls the original position.



Procedure :

1. Keep the set horizontal.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Insert disc (YEDS-18) and press ▷ PLAY button.
3. Connect oscilloscope to TP (FEO) and TP (VC) on BD board.
4. Adjustment RV101 on digital board so that the waveform is as shown in the figure below. (focus gain adjustment)

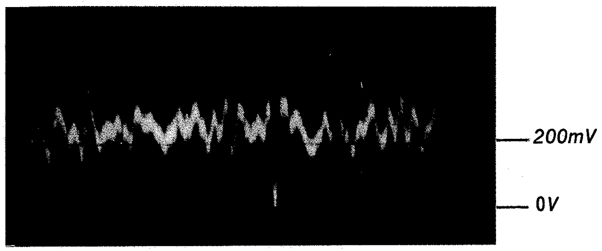
VOLT/DIV : 100mV
TIME/DIV : 2mS



- Incorrent Examples (DC level changes more than on adjusted waveform)

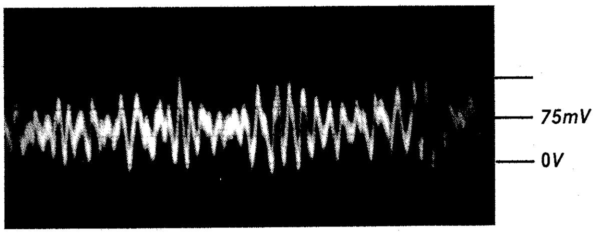
low focus gain

VOLT/DIV : 100mV
TIME/DIV : 2mS

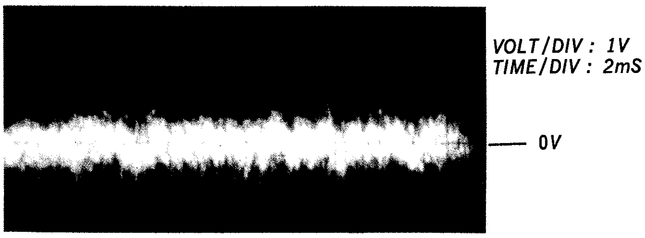


high focus gain

VOLT/DIV : 100mV
TIME/DIV : 2mS

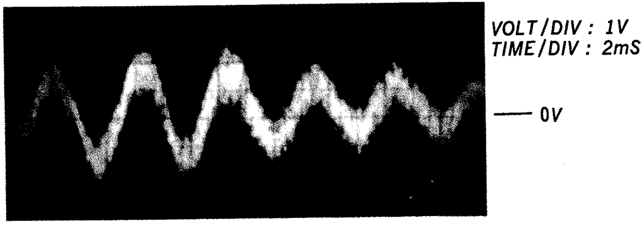


5. Connect oscilloscope to TP (TEO) and TP (VC) on BD board.
6. Adjusted MV102 on digital board so that the waveform is as shown the flgure below. (tracking gain adjustment)

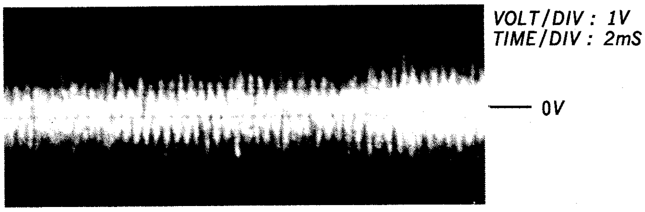


- Incorrect Examples (fundamentia wave appears)

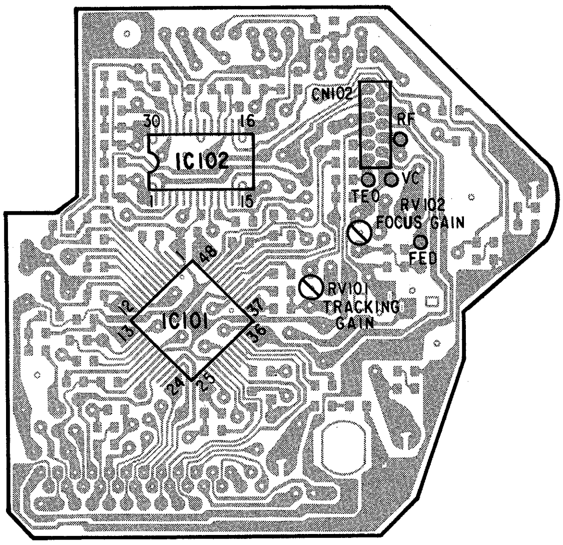
low tracking gain



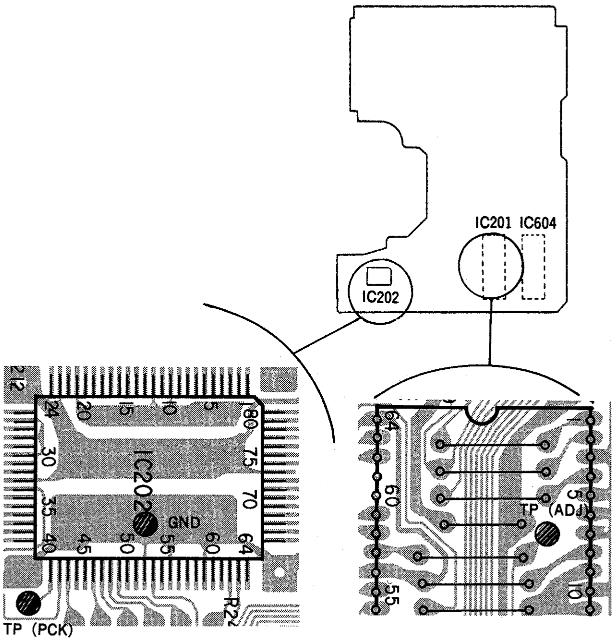
high tracking gain
(high fandamential wave than for low gain)



Adjustment Locations:
[BD board]


CN102
30
16
RF
IC102
1
15
TEO
VC
RV102
FOCUS GAIN
FEO
48
RV101
TRACKING GAIN
IC101
37
36
24
25
12
13

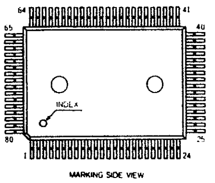
[Main board]


IC201 IC604
IC202
212
24
20
15
10
5
80
75
70
30
35
40
45
50
55
60
64
IC202
GND
TP (PCK)
R2
64
60
55
5
10
TP (ADJ)

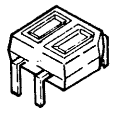
SECTION 6
DIAGRAMS

6-1. SEMICONDUCTOR LEAD LAYOUTS

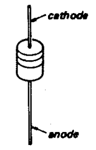
CXA1372Q
CXD2500Q


64
41
65
40
80
25
1
24
INDEX
MARKING SIDE VIEW

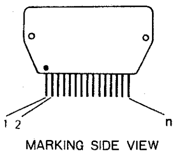
GP-2S09-C



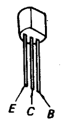
HZS6B1L
UZ-3.0BS
UZ-4.7BSC
UZL-7M3
UZL-9H1
1SS120
1SS202-1
11ES2


cathode
anode

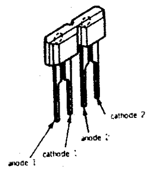
STK-4122MK2


1 2
n
MARKING SIDE VIEW

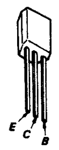
2SB1013-4
2SC3112-B
2SD1616A-K



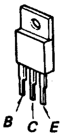
KV1236-D


cathode 2
anode 2
cathode 1
anode 1

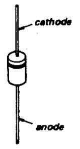
DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC2603-EF
2SC2724-CD
2SC3622A-LK



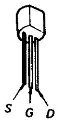
2SB1187-EF
2SC2001-LK
2SD1761-EF



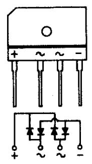
UZP-5.1BC


cathode
anode

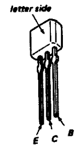
2SK246-GR3
2SK246-Y



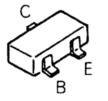
RBA-402



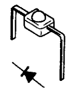
DTC114TS
2SA1175-HFE


letter side
E C B

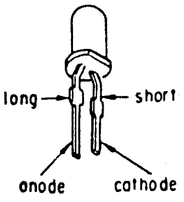
DTC144EK



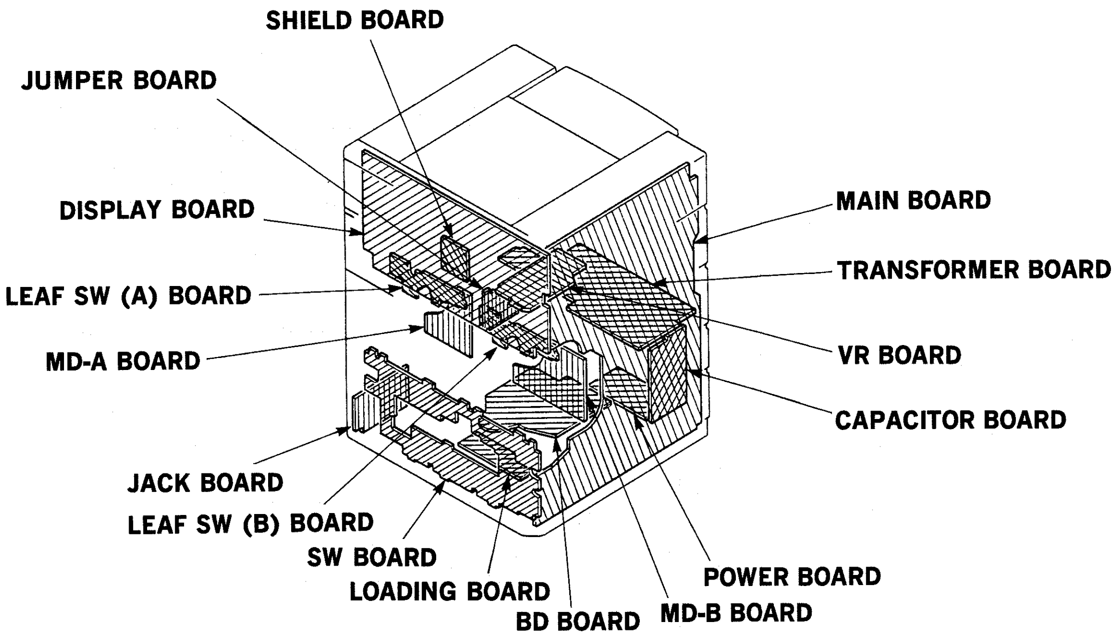
GL-1EG112-CD
GL-1HD112-DE
GL-1HY112-CD



SEL4214R-LC05
SEL4914R-LC05


long
short
onode
cothode

6-2. CIRCUIT BOARDS LOCATION


SHIELD BOARD
JUMPER BOARD
DISPLAY BOARD
LEAF SW (A) BOARD
MD-A BOARD
JACK BOARD
LEAF SW (B) BOARD
SW BOARD
LOADING BOARD
BD BOARD
MD-B BOARD
POWER BOARD
CAPACITOR BOARD
VR BOARD
TRANSFORMER BOARD
MAIN BOARD

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D11A	I-13	IC253	E-29	Q103(∗2)	G-24
D11B	I-7	IC601	D-27	Q104(∗1)	F-17
D21(∗4)	C-24	IC602	C-27	Q104(∗2)	F-23
D81(∗1)	F-17	IC603	E-27	Q201	E-29
D81(∗2)	F-23	IC604	C-31	Q231	F-31
D81B	G-2	IC701(∗1)	C-20	Q232	E-31
D201	F-30	IC701(∗2)	C-26	Q233	F-30
D205	D-29	IC702(∗1)	D-20	Q234	E-31
D206	C-13	IC702(∗2)	D-26	Q252	E-30
D207	C-13	IC703(∗1)	E-20	Q253	E-30
D301	E-8	IC703(∗2)	E-26	Q351	D-6
D302	E-8	IC704(∗1)	B-20	Q352	C-7
D303	E-12	IC705(∗1)	F-20	Q353	C-6
D304	E-12	IC705(∗2)	F-26	Q354	D-11
D305	D-7	IC706(∗1)	I-18	Q601	E-28
D306	D-8	IC706(∗2)	I-24	Q602	B-28
D307	D-9	IC999	H-30	Q603	E-28
D308	D-12			Q604	B-29
D309	D-13	Q1(∗1)	D-17	Q605	C-29
D601	E-28	Q1(∗2)	D-23	Q606	B-29
D602	C-28	Q2(∗3)	D-17	Q607	B-31
D603	D-29	Q3(∗1)	E-18	Q608	D-28
D604	B-31	Q3(∗2)	E-24	Q609	D-28
D605	D-29	Q4(∗1)	D-18	Q610	D-28
D606	C-29	Q4(∗2)	D-24	Q611	D-28
D701	B-27	Q5(∗1)	B-17	Q612	D-29
D702	B-27	Q5(∗4)	B-23	Q613	E-27
D703(∗1)	H-19	Q6(∗4)	E-24	Q614	E-27
D703(∗2)	H-25	Q7(∗1)	D-18	Q615	F-28
D741(∗1)	F-20	Q7(∗4)	D-24	Q616	E-28
D741(∗2)	F-26	Q8(∗1)	D-18	Q617	C-31
D742(∗1)	G-20	Q8(∗4)	D-24	Q701(∗1)	E-20
D742(∗2)	G-26	Q9(∗1)	B-17	Q701(∗2)	E-26
D743(∗1)	G-20	Q9(∗4)	B-23	Q741(∗1)	G-20
D743(∗2)	G-26	Q11A	I-9	Q741(∗2)	G-26
D744(∗1)	G-20	Q11B	I-3	Q742(∗1)	G-20
D744(∗2)	G-26	Q12A	H-12	Q742(∗2)	G-26
D745	E-28	Q12B	H-5	Q751(∗1)	E-20
D746	E-28	Q51(∗1)	D-16	Q751(∗2)	E-26
		Q51(∗2)	D-22	Q781(∗1)	E-20
IC51(∗1)	E-16	Q52(∗1)	D-16	Q781(∗2)	E-26
IC51(∗2)	E-22	Q52(∗2)	D-22	Q782(∗1)	E-20
IC81(∗1)	F-18	Q53(∗1)	D-15	Q782(∗2)	E-26
IC81(∗2)	F-24	Q54(∗1)	D-15	Q791(∗1)	H-19
IC81A	G-9	Q81B	I-2	Q791(∗2)	H-25
IC81B	G-3	Q82B	H-2	Q792(∗1)	G-19
IC101(BD)	E-34	Q83B	H-2	Q792(∗2)	G-25
IC102(BD)	D-34	Q101(∗1)	H-16	Q794(∗1)	H-18
IC201	D-31	Q101(∗2)	H-22	Q794(∗2)	H-24
IC202	H-31	Q101(BD)	F-35	Q795(∗1)	I-18
IC221	G-31	Q102(∗1)	H-16	Q795(∗2)	I-24
IC222	F-32	Q102(∗2)	H-22	Q999	G-29
IC223	F-31	Q103(∗1)	G-18		

∗1: Used on AEP, UK, WG, IT model.
∗2: Used on US, CND, E, EA, AUS model.
∗3: Used on WG, IT model.
∗4: Used on E, EA, AUS model.
BD: Used on BD board.

6-3. PRINTED WIRING BOARDS —Tuner/Deck/CD Section—

- ●Refer to page 17 for Semiconductor Lead Layouts.
- ●Refer to page 19 for Semiconductor Location.

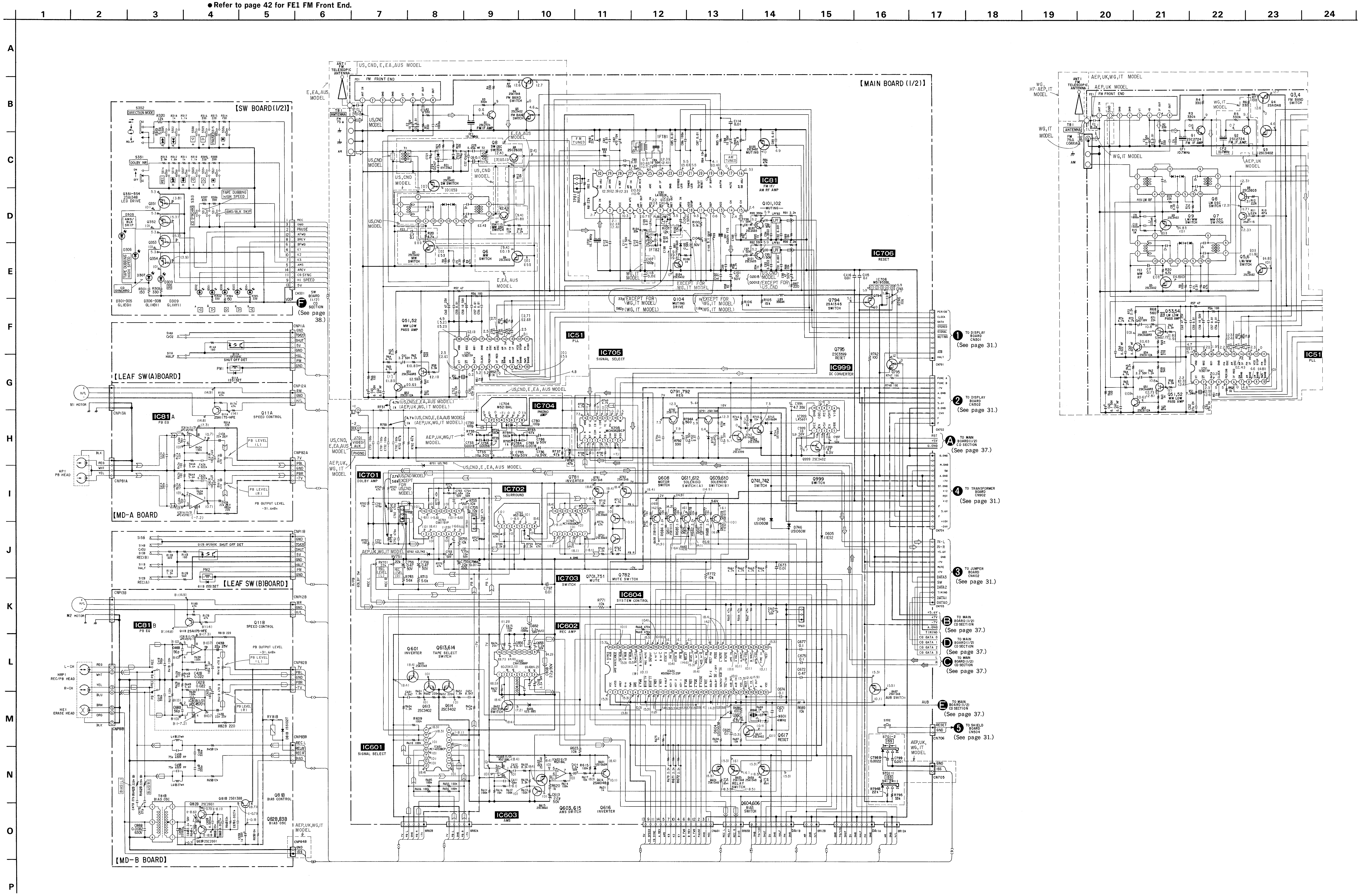
Note:

- ● ○—— : parts extracted from the component side.
- ● —— : parts extracted from the conductor side.
- ● ⬚← indicates side identified with part number.
- ● ● : Through hole.
- ● ▨ : Pattern on the side which is seen.
- ● ░ : Pattern of the rear side.
- ● CND: Canadian model
  WG : West Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
A B C D E F G H I J
【SW BOARD】
S209 REPEAT
S210 CONTINUE
S214 TIME
PLAY MODE
DECK A
DECK B
【MD-B BOARD】
AEP,UK,WG,IT MODEL
【MD-A BOARD】
HRP1 RECORD/PLAYBACK HEAD
HE1 ERASE HEAD
M1 REEL CAPSTAN MOTOR
HP1 PLAYBACK HEAD
BLU
WHT
RED
【LEAF SW(B) BOARD】
【LEAF SW(A) BOARD】
PM1 PLUNGER SOLENOID
(CHASSIS)
BLK
【MAIN BOARD】
AEP,UK,WG,IT MODEL
US,CND, E,EA,AUS MODEL
WG,IT MODEL
H7: AEP,IT MODEL
ANTENNA
FM 75Ω COAXIAL
AM
US,CND, E,EA,AUS MODEL
J701 VIDEO/AUX
PHONO
AEP,UK,WG, IT MODEL
S701 ISS
(See page 34.)
TO SHIELD BOARD CN504
⑤
①
TO DISPLAY BOARD CN501
(See page 33.)
②
TO DISPLAY BOARD CN502
(See page 33.)
③
TO JUMPER BOARD CN402
(See page 34.)
④
TO TRANSFORMER BOARD CN902
(See page 34.)
【LOADING BOARD】
LOADING MOTOR
【BD BOARD】
OPTICAL PICK-UP BLOCK (KSS-240A)

6-4. SCHEMATIC DIAGRAM—Tuner/Deck Section—

- Refer to page 39 for IC Block Diagrams.
- Refer to page 42 for FE1 FM Front End.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
[SW BOARD(1/2)]
[LEAF SW(A)BOARD]
[MD-A BOARD]
[LEAF SW(B)BOARD]
[MD-B BOARD]
[MAIN BOARD(1/2)]
FE1 FM FRONT END
IC81 A PB EQ
IC81 B PB EQ
IC51 PLL
IC705 SIGNAL SELECT
IC706 RESET
IC999 DC CONVERTER
IC704 PHONO AMP
IC701 DOLBY AMP
IC702 SURROUND
IC703 SWITCH
IC604 SYSTEM CONTROL
IC602 REC AMP
IC601 SIGNAL SELECT
IC603 AMS
M1 MOTOR
M2 MOTOR
HP1 PB HEAD
HRP1 REC/PB HEAD
HE1 ERASE HEAD
1 TO DISPLAY BOARD CN501 (See page 31.)
2 TO DISPLAY BOARD CN502 (See page 31.)
A TO MAIN BOARD(1/2) CD SECTION (See page 37.)
4 TO TRANSFORMER BOARD CN902 (See page 31.)
3 TO JUMPER BOARD CN402 (See page 31.)
B TO MAIN BOARD(1/2) CD SECTION (See page 37.)
D TO MAIN BOARD(1/2) CD SECTION (See page 37.)
C TO MAIN BOARD(1/2) CD SECTION (See page 37.)
E TO MAIN BOARD(1/2) CD SECTION (See page 37.)
5 TO SHIELD BOARD CN504 (See page 31.)
F SW BOARD (1/2) CD SECTION (See page 38.)
AEP,UK,WG,IT MODEL
US,CND,E,EA,AUS MODEL

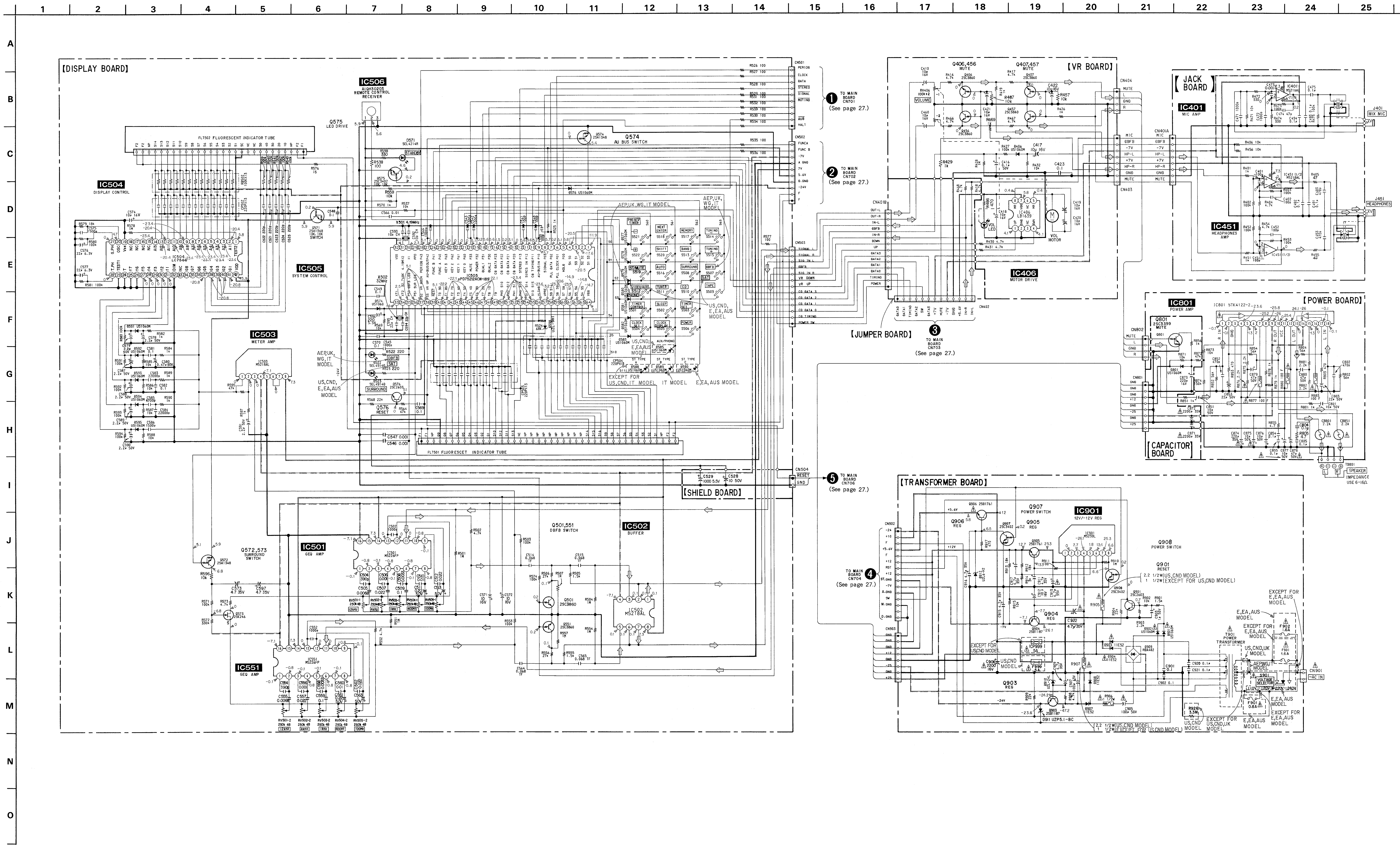
Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ⊣w∿⊢ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬ : B+ Line
- ▬ ▬ : B– Line
- ☐ : adjustment for repair.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  (   ): Playback
  <   >: MW
  [   ]: LW
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ⇨ : PB (DECK A)
  ⇨ : CD
  ⇨ : PB (DECK B)
  ⇨ : REC
- CND: Canadian model
  WG : West Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

6-5. SCHEMATIC DIAGRAM—Power/Amplifier/Display Section— ● Refer to page 39 for IC Block Diagrams.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
A B C D E F G H I J K L M N O
[DISPLAY BOARD]
IC504
DISPLAY CONTROL
FLT502 FLUORESCENT INDICATOR TUBE
IC505
SYSTEM CONTROL
IC503
METER AMP
IC506
A1QH30205
REMOTE CONTROL RECEIVER
Q575
LED DRIVE
Q574
2SA1348
AU BUS SWITCH
Q571
2SA1348
10K SWITCH
D571
SEL4214R
STANDBY
IC505
μPD75212ACW-189
X501 4.19MHz
X502 32kHz
Q576
RESET
SURROUND
DBFB
SAT
AEP,UK,WG,IT MODEL
AEP,UK, WG,IT MODEL
US,CND, E,EA,AUS MODEL
EXCEPT FOR US,CND,IT MODEL
IT MODEL
E,EA,AUS MODEL
ST TYPE
PRESET TIMER
NEXT ENTER
MEMORY
TUNING
SHIFT
BAND
ST/MUTE
AUTO
SURROUND
DBFB
TIMER SET
CLOCK
SLEEP
POWER
TAPE
AUX/PHONO
FLT501 FLUORESCENT INDICATOR TUBE
CN501
CN502
CN503
CN504
RESET
GND
TO MAIN BOARD CN701
(See page 27.)
TO MAIN BOARD CN702
(See page 27.)
TO MAIN BOARD CN706
(See page 27.)
[SHIELD BOARD]
C529 1000 5.5V
C528 10 50V
Q572,573
SURROUND SWITCH
IC501
GEQ AMP
IC551
GEQ AMP
Q501,551
DBFB SWITCH
IC502
BUFFER
M5218AL
Q501 2SC3860
Q551 2SC3860
RV501-2 250k 4B
RV502-2 250k 4B
RV503-2 250k 4B
RV504-2 250k 4B
RV505-2 250k 4B
[VR BOARD]
Q406,456
MUTE
Q407,457
MUTE
VOLUME
IC406
MOTOR DRIVE
LB1639
VOL LED
VOL MOTOR
CN401B
CN402
CN404
CN403
[JUMPER BOARD]
TO MAIN BOARD CN703
(See page 27.)
[JACK BOARD]
IC401
MIC AMP
J401
MIX MIC
IC451
HEADPHONES AMP
J451
HEADPHONES
CN401A
[POWER BOARD]
IC801
POWER AMP
IC801 STK4122-2
Q801
2SC3399
MUTE
CN802
CN801
[CAPACITOR BOARD]
TB801
SPEAKER
IMPEDANCE USE 6-16Ω
[TRANSFORMER BOARD]
CN902
CN903
TO MAIN BOARD CN704
(See page 27.)
Q904 2SB1761
Q906
REG
Q907
POWER SWITCH
Q905
REG
IC901
12V/-12V REG
Q908
POWER SWITCH
Q901
RESET
Q904
REG
Q903
REG
D901 UZP5.1-BC
2.2 1/2W(US,CND MODEL)
1 1/2W(EXCEPT FOR US,CND MODEL)
EXCEPT FOR US,CND MODEL
US,CND MODEL
EXCEPT FOR E,EA,AUS MODEL
E,EA,AUS MODEL
EXCEPT FOR E,EA,AUS MODEL
US,CND,UK MODEL
AEP,WG,IT MODEL
T901
POWER TRANSFORMER
S901
VOLTAGE SELECTOR
R926 3.3M
EXCEPT FOR US,CND,UK MODEL
CN901
AC IN

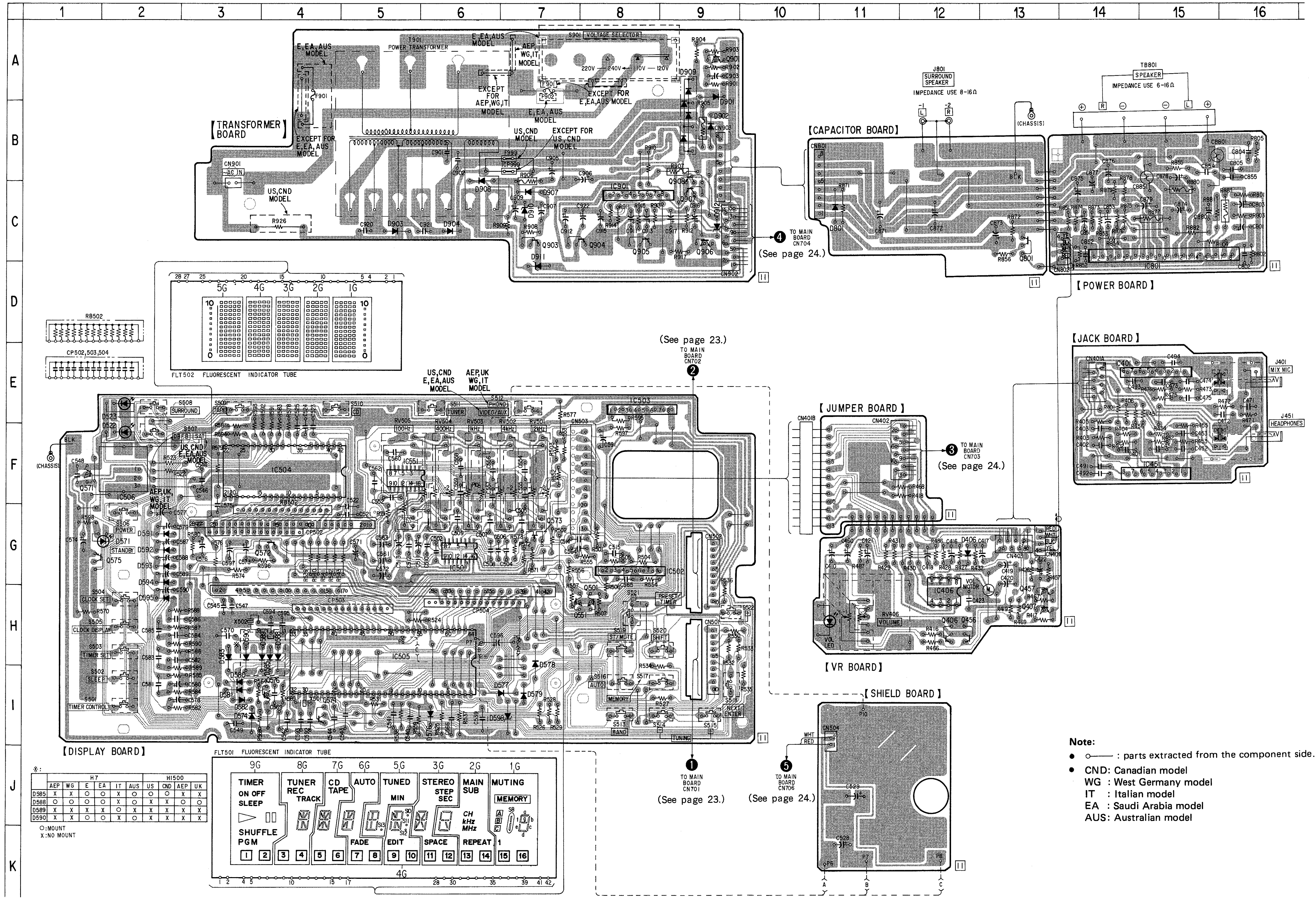
Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⏛ : fusible resistor.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ━━━ : B+ Line
- ━ ━ ━ : B– Line
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
  no mark : POWER ON
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
- CND: Canadian model
  WG : West Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

6-6. PRINTED WIRING BOARDS—Power/Amplifier/Display Section— ● Refer to page 17 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
【TRANSFORMER】
【BOARD】
T901 POWER TRANSFORMER
S901 VOLTAGE SELECTOR
220V — 240V — 110V — 120V
E,EA,AUS MODEL
AEP, WG,IT MODEL
EXCEPT FOR AEP,WG,IT MODEL
EXCEPT FOR E,EA,AUS MODEL
EXCEPT FOR E,EA,AUS MODEL
US,CND MODEL
EXCEPT FOR US,CND MODEL
CN901 AC IN
F901
R926
IC901
4 TO MAIN BOARD CN704
(See page 24.)
【CAPACITOR BOARD】
J801 SURROUND SPEAKER
IMPEDANCE USE 8-16Ω
TB801 SPEAKER
IMPEDANCE USE 6-16Ω
(CHASSIS)
IC801
【POWER BOARD】
【JACK BOARD】
J401 MIX MIC
J451 HEADPHONES
【JUMPER BOARD】
3 TO MAIN BOARD CN703
(See page 24.)
【VR BOARD】
RV406 VOLUME
【SHIELD BOARD】
(See page 23.)
2 TO MAIN BOARD CN702
1 TO MAIN BOARD CN701
(See page 23.)
5 TO MAIN BOARD CN706
(See page 24.)
RB502
CP502,503,504
FLT502 FLUORESCENT INDICATOR TUBE
US,CND E,EA,AUS MODEL
AEP,UK WG,IT MODEL
IC503
IC504
IC505
IC506
IC551
S508 SURROUND
S501 TIMER CONTROL
S502 SLEEP
S503 TIMER SET
S504 CLOCK SET
S505 CLOCK DISPLAY
S506 POWER
STANDBY
S513 BAND
S516 AUTO
S517 MEMORY
S518 NEXT ENTER
S519 ST/MONO
S520 SHIFT
S521 PRESET TIMER
TUNING
(CHASSIS)
【DISPLAY BOARD】
FLT501 FLUORESCENT INDICATOR TUBE
9G
8G
7G
6G
5G
3G
2G
1G
4G
TIMER
ON OFF
SLEEP
SHUFFLE
PGM
TUNER
REC
TRACK
CD
TAPE
AUTO
TUNED
MIN
STEREO
STEP
SEC
MAIN
SUB
MUTING
MEMORY
CH
kHz
MHz
FADE
EDIT
SPACE
REPEAT

※:

	H7						H1500			
	AEP	WG	E	EA	IT	AUS	US	CND	AEP	UK
D585	X	X	O	O	X	O	O	O	X	X
D588	O	O	O	O	X	O	X	X	O	O
D589	X	X	X	X	O	X	X	X	X	X
D590	X	X	O	O	X	O	X	X	X	X

O: MOUNT
X: NO MOUNT

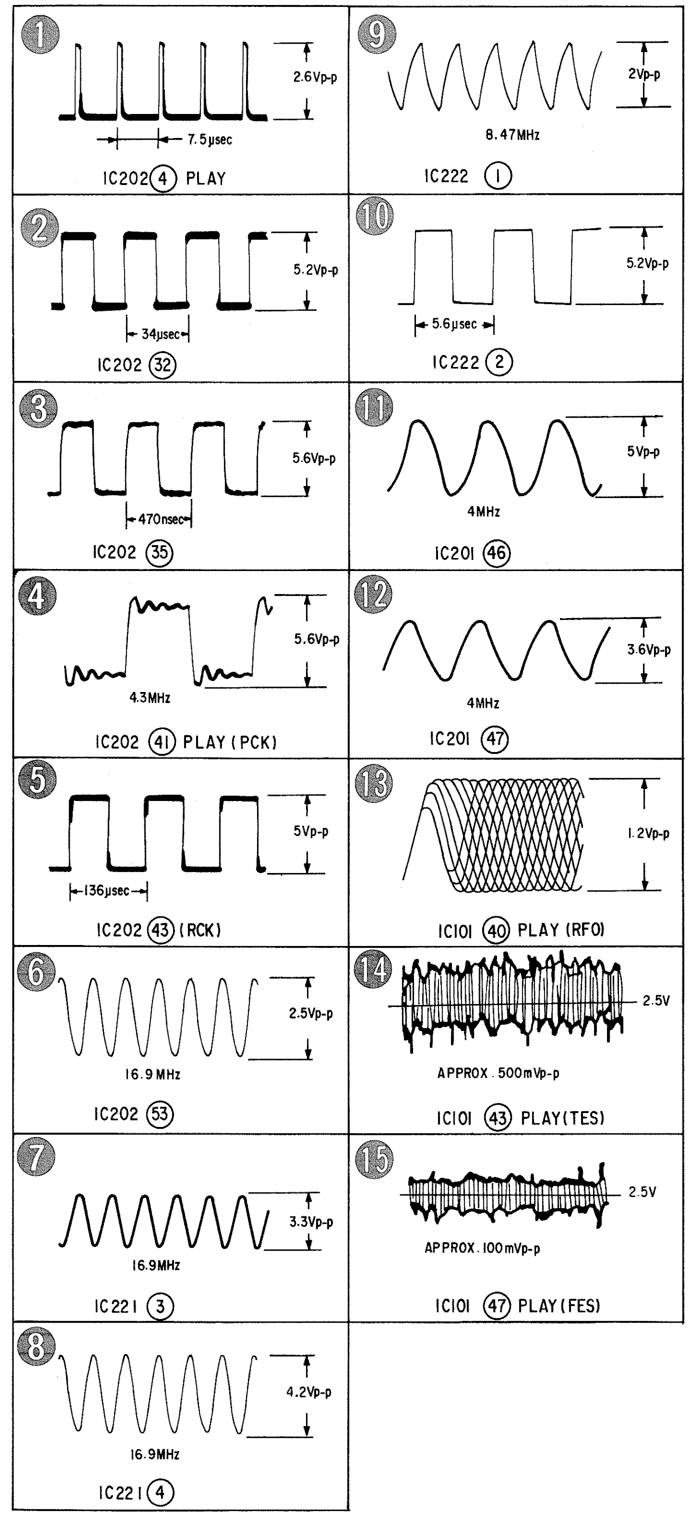
Note:

- ○—— : parts extracted from the component side.
- CND: Canadian model
  WG : West Germany model
  IT : Italian model
  EA : Saudi Arabia model
  AUS: Australian model

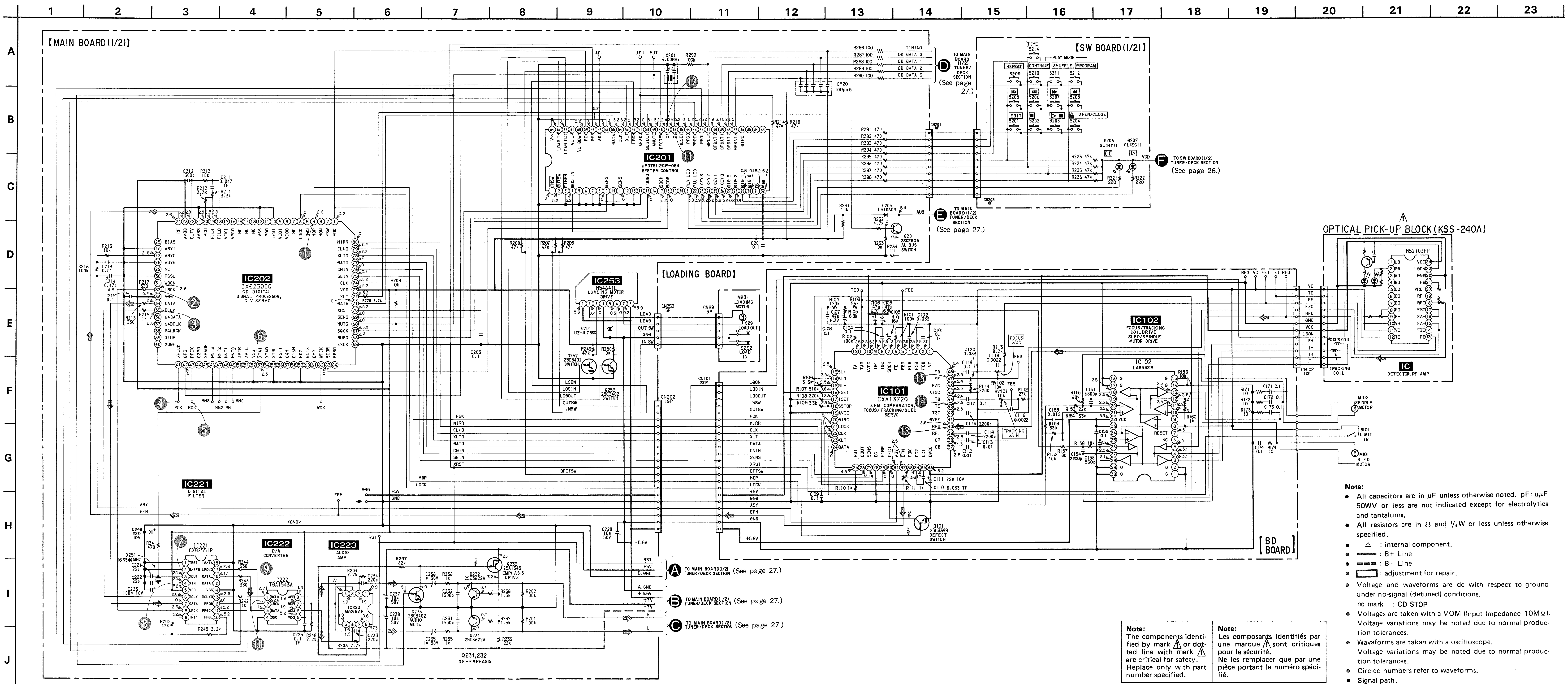
● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D406	G-12	IC451	F-14
D522	F-2	IC501	G-6
D523	E-2	IC502	G-8
D571	G-2	IC503	E-8
D574	I-3	IC504	F-4
D576	I-6	IC505	H-5
D577	I-6	IC506	F-2
D578	I-7	IC551	F-5
D579	I-7	IC801	C-15
D580	I-3	IC901	C-8
D581	I-3		
D582	I-3	Q406	H-12
D583	H-3	Q407	H-13
D585	H-4	Q456	H-12
D588	H-4	Q457	H-13
D589	H-3	Q501	H-8
D590	H-3	Q551	H-7
D591	G-2	Q571	F-1
D592	G-2	Q572	G-3
D593	G-2	Q573	G-7
D594	G-2	Q574	I-4
D595	H-2	Q575	G-1
D598	I-6	Q576	I-4
D801	C-11	Q801	C-13
D901	A-9	Q901	A-9
D902	B-9	Q903	C-7
D903	C-5	Q904	C-7
D904	C-6	Q905	C-8
D907	C-7	Q906	C-9
D908	C-6	Q907	C-9
D909	A-9	Q908	C-9
D910	C-7		
D911	D-7		
D912	C-9		
IC401	E-14		
IC406	H-12		

● Waveforms



6-7. SCHEMATIC DIAGRAM—CD Section— ●Refer to page 35 for Waveforms.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A B C D E F G H I J
【MAIN BOARD(1/2)】
IC201
μPD75112CW-064
SYSTEM CONTROL
IC202
CXD2500Q
CD DIGITAL SIGNAL PROCESSOR, CLV SERVO
IC253
M54641L
LOADING MOTOR DRIVE
【LOADING BOARD】
M251 LOADING MOTOR
S291 LOAD OUT
S292 LOAD IN
IC221
DIGITAL FILTER
IC221 CXD2551P
IC222
D/A CONVERTER
IC222 TDA1543A
IC223
AUDIO AMP
IC223 M5218AP
Q234 2SC3402 AUDIO MUTE
Q233 2SA1345 EMPHASIS DRIVE
Q231,232 DE-EMPHASIS
【SW BOARD(1/2)】
S214 TIME
PLAY MODE
S209 REPEAT
S210 CONTINUE
S211 SHUFFLE
S212 PROGRAM
S201 EDIT
S204 OPEN/CLOSE
TO MAIN BOARD (1/2) TUNER/DECK SECTION (See page 27.)
TO SW BOARD(1/2) TUNER/DECK SECTION (See page 26.)
Q201 2SC2603 AU BUS SWITCH
IC101
CXA1372Q
EFM COMPARATOR, FOCUS/TRACKING/SLED SERVO
IC102
FOCUS/TRACKING COIL DRIVE SLED/SPINDLE MOTOR DRIVE
IC102 LA6532M
FOCUS GAIN
TRACKING GAIN
Q101 2SC3399 DEFECT SWITCH
[BD BOARD]
OPTICAL PICK-UP BLOCK(KSS-240A)
M52103FP
FOCUS COIL
TRACKING COIL
IC DETECTOR,RF AMP
M102 SPINDLE MOTOR
S101 LIMIT IN
M101 SLED MOTOR

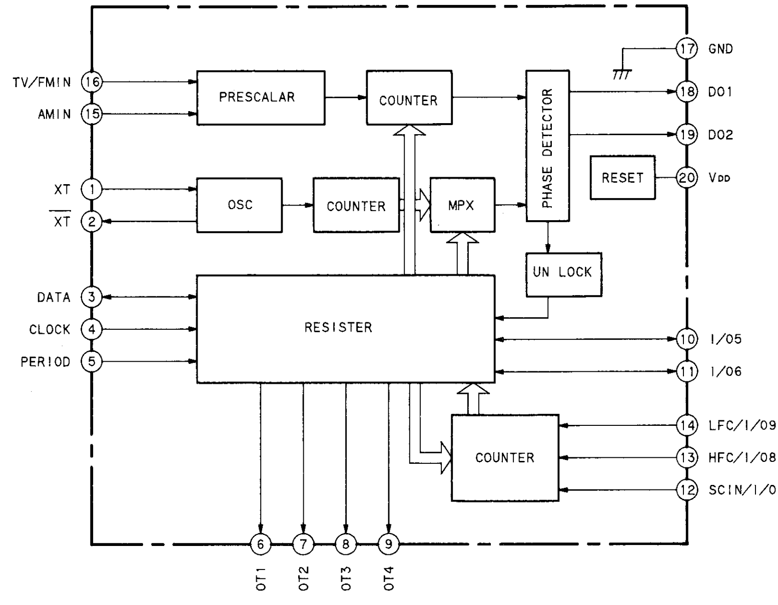
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▬ : B+ Line
- ▬▬ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD STOP
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

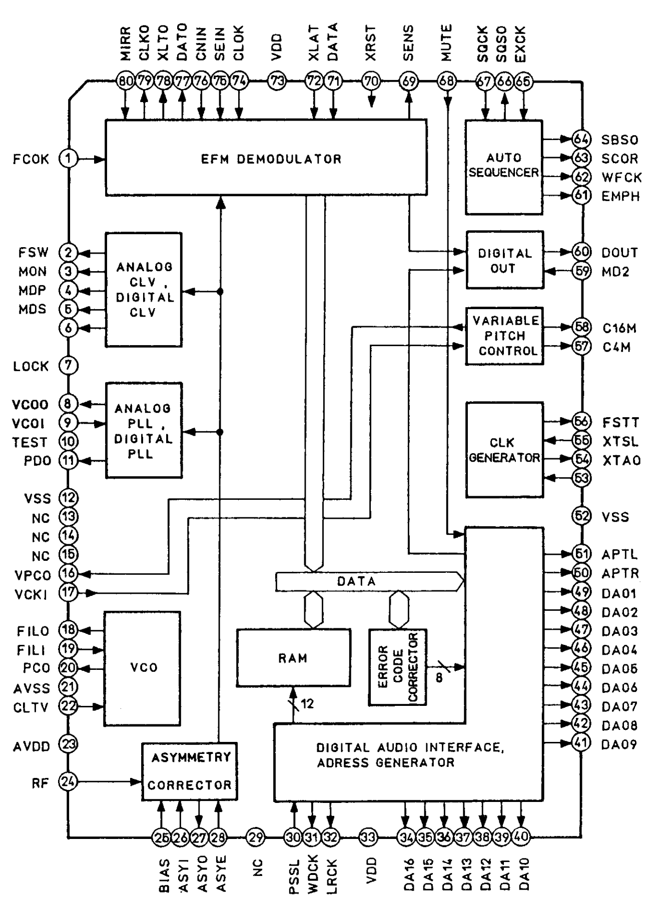
• IC Block Diagrams

• IC51 TC9217P



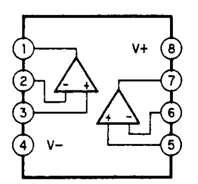
TV/FM/IN
AM/IN
XT
XT
DATA
CLOCK
PERIOD
PRESCALAR
COUNTER
OSC
COUNTER
MPX
PHASE DETECTOR
RESET
UN LOCK
RESISTER
COUNTER
GND
DO1
DO2
Vdd
I/O5
I/O6
LFC/I/O9
HFC/I/O8
SCIN/I/O7
OT1
OT2
OT3
OT4

• IC202 CXD2500Q

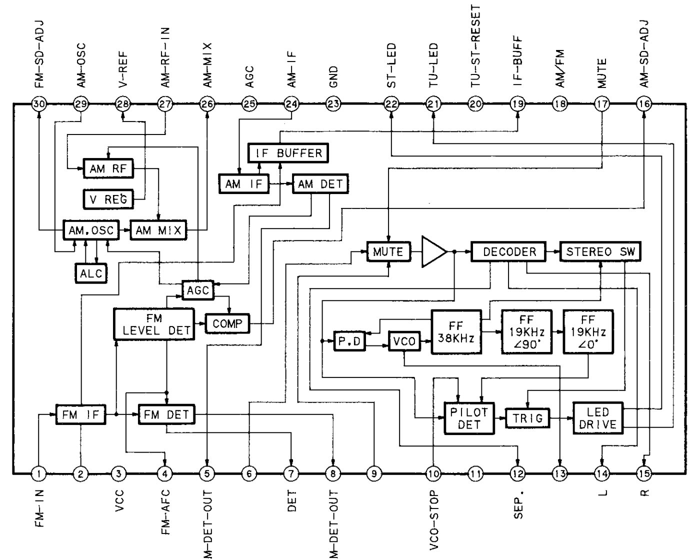


FCOK
EFM DEMODULATOR
AUTO SEQUENCER
FSW
MON
MDP
MDS
ANALOG CLV DIGITAL CLV
LOCK
DIGITAL OUT
VARIABLE PITCH CONTROL
VCOO
VCOI
TEST
PDO
ANALOG PLL DIGITAL PLL
CLK GENERATOR
VSS
NC
VPCO
VCKI
DATA
FILO
FILI
PCO
AVSS
CLTV
VCO
RAM
ERROR CODE CORRECTOR
AVDD
RF
ASYMMETRY CORRECTOR
DIGITAL AUDIO INTERFACE, ADRESS GENERATOR
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
VSS
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09

• IC223 M5218AP

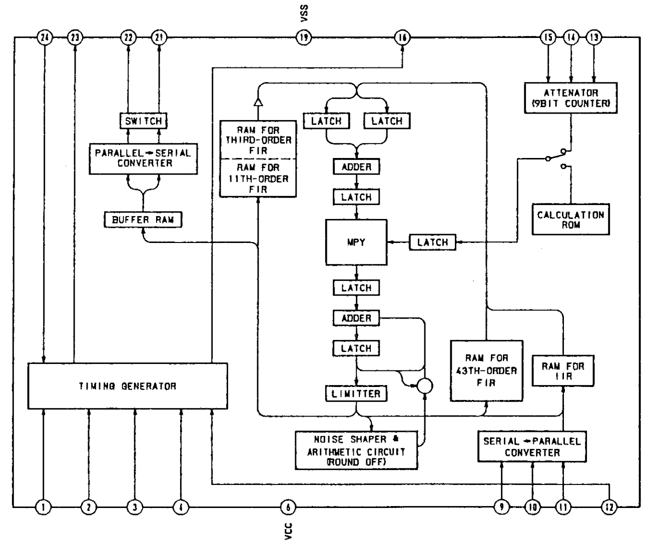


• IC81 LA1851N



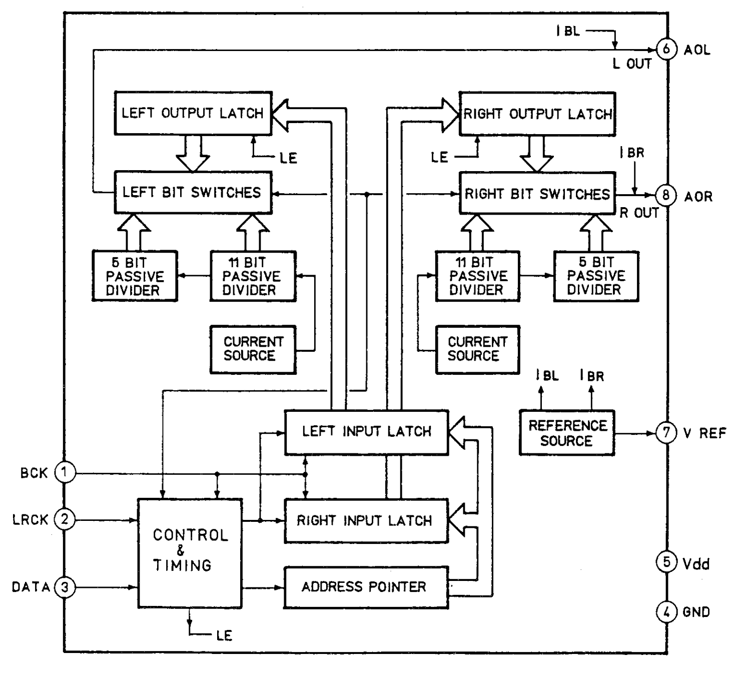
AM RF
V. RES
AM OSC
AM MIX
ALC
AGC
IF BUFFER
AM IF
AM DET
COMP
FM LEVEL DET
MUTE
DECODER
STEREO SW
PLO
VCO
FF 38kHz
FF 19kHz
FF 19kHz
PILOT DET
TRIG
LED DRIVE
FM IF
FM DET

• IC221 CXD2551P



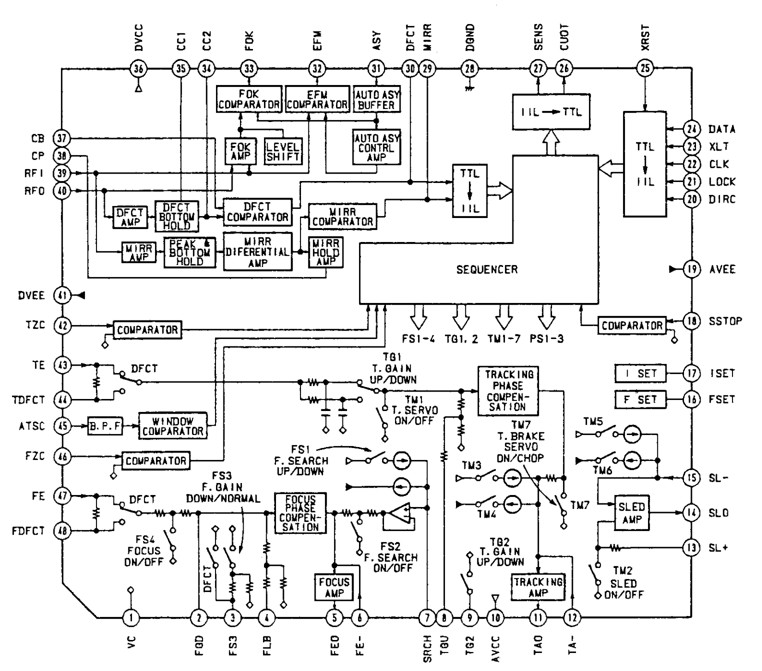
SWITCH
PARALLEL→SERIAL CONVERTER
BUFFER RAM
LATCH
ADDER
MPY
ATTENUATOR 8BIT COUNTER
CALCULATION ROM
LIMITTER
NOISE SHAPER & ARITHMETIC CIRCUIT
SERIAL→PARALLEL CONVERTER
TIMING GENERATOR

• IC222 TDA1543A



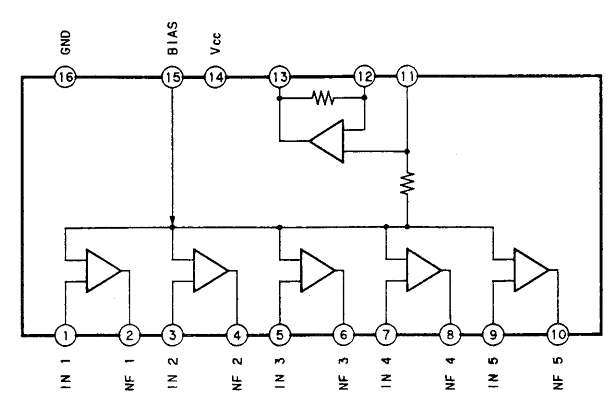
LEFT OUTPUT LATCH
RIGHT OUTPUT LATCH
LEFT BIT SWITCHES
RIGHT BIT SWITCHES
5 BIT PASSIVE DIVIDER
11 BIT PASSIVE DIVIDER
CURRENT SOURCE
REFERENCE SOURCE
LEFT INPUT LATCH
RIGHT INPUT LATCH
CONTROL & TIMING
ADDRESS POINTER
BCK
LRCK
DATA
AOL
AOR
V REF
Vdd
GND
LE
IBL
IBR

• IC101 CXA1372Q



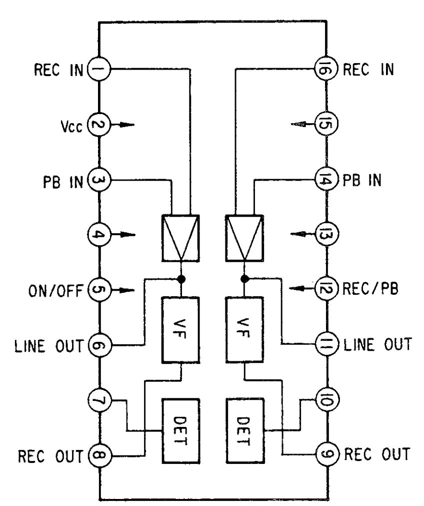
SEQUENCER
DATA
XLT
CLK
LOCK
DIRC
AVEE
SSTOP
ISET
FSET
SL-
SLO
SL+
COMPARATOR
WINDOW COMPARATOR
FOCUS AMP
TRACKING AMP
SLED AMP

• IC501, IC551 M5226FP



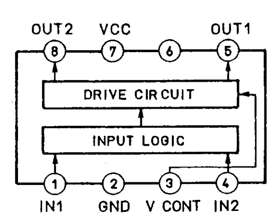
GND
BIAS
Vcc
IN 1
NF 1
IN 2
NF 2
IN 3
NF 3
IN 4
NF 4
IN 5
NF 5

• IC701 CXA1101P



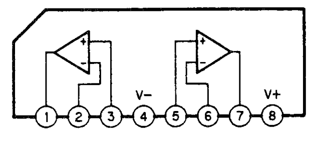
REC IN
Vcc
PB IN
ON/OFF
REC/PB
LINE OUT
REC OUT
VF
DET

• IC406 LB1639

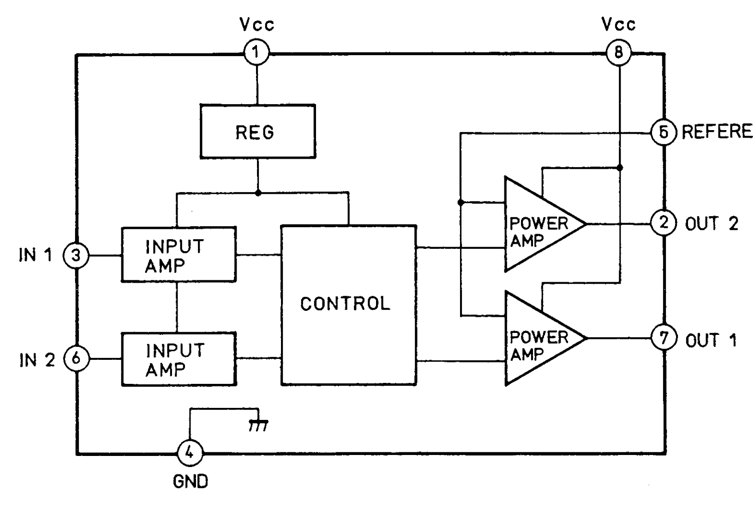


OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2

• IC401, 502, 503, 603, 702, 704 M5218AL

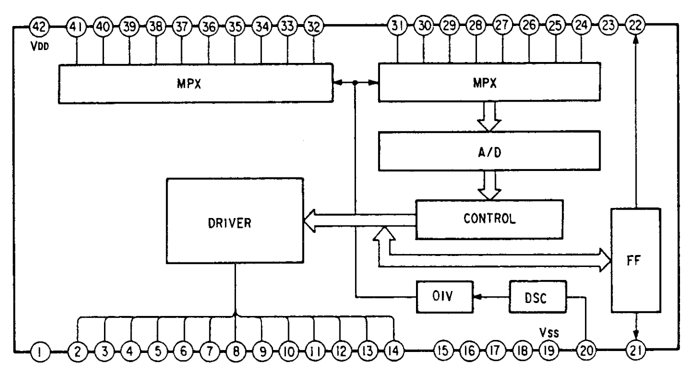


• IC253 M54641L



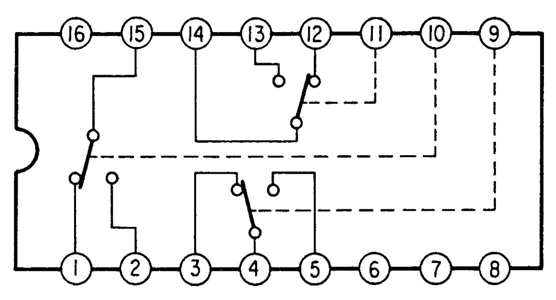
Vcc
Vcc
REG
REFERENCE
OUT 2
OUT 1
IN 1
IN 2
INPUT AMP
INPUT AMP
CONTROL
POWER AMP
POWER AMP
GND

• IC504 LC7566

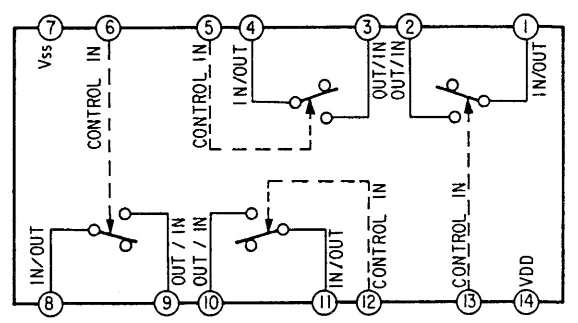


MPX
MPX
A/D
CONTROL
DRIVER
DIV
OSC
FF

• IC601 MC14053BCP

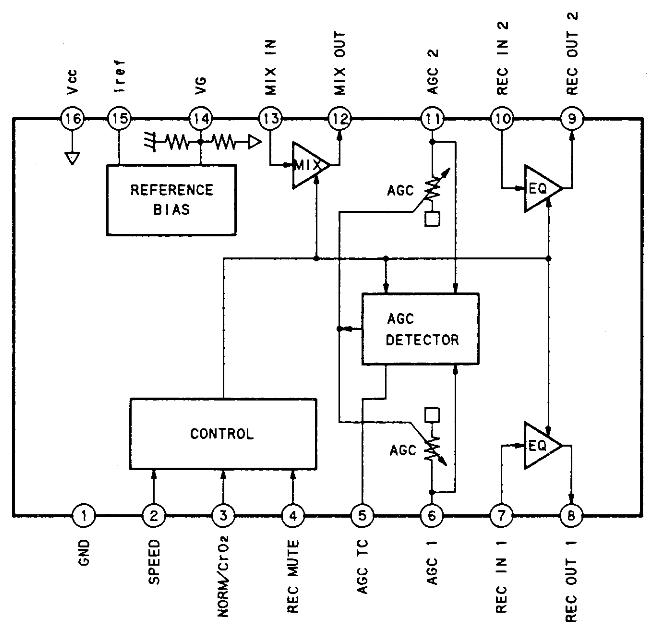


• IC703 MC14066BCP



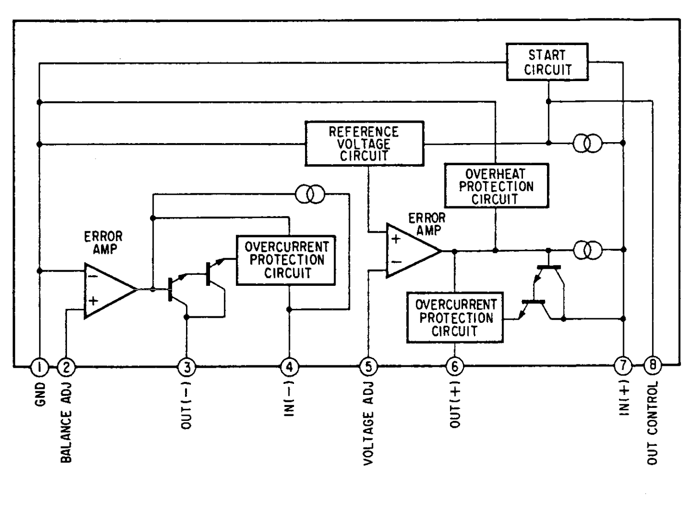
CONTROL IN
IN/OUT
OUT/IN
VDD
VSS

• IC602 CXA1298AP



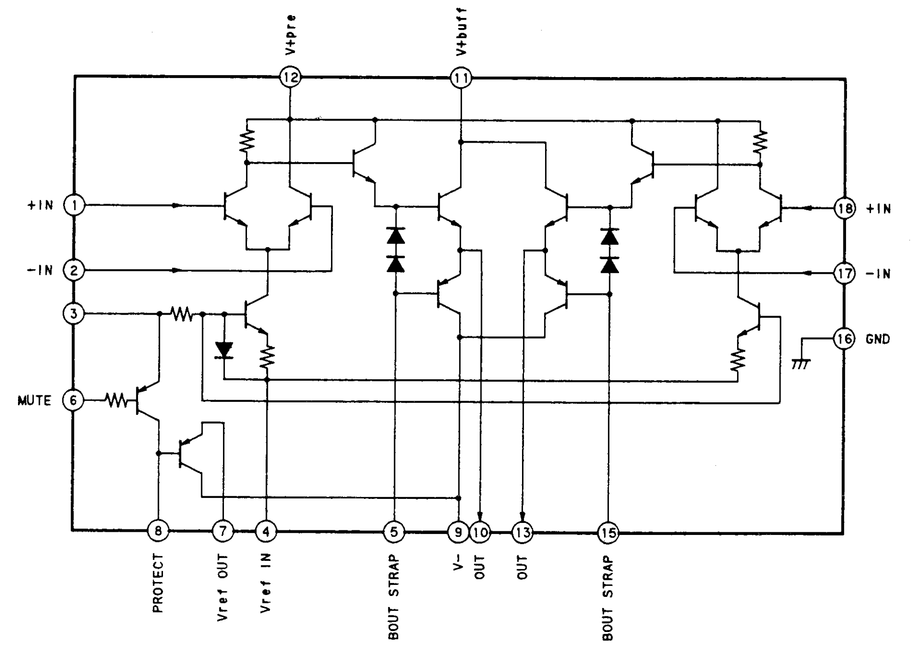
REFERENCE BIAS
MIX
AGC
AGC DETECTOR
EQ
CONTROL
GND
SPEED
NORM/CrO2
REC MUTE
AGC TC
AGC 1
REC IN 1
REC OUT 1
REC IN 2
REC OUT 2

• IC901 M5230L



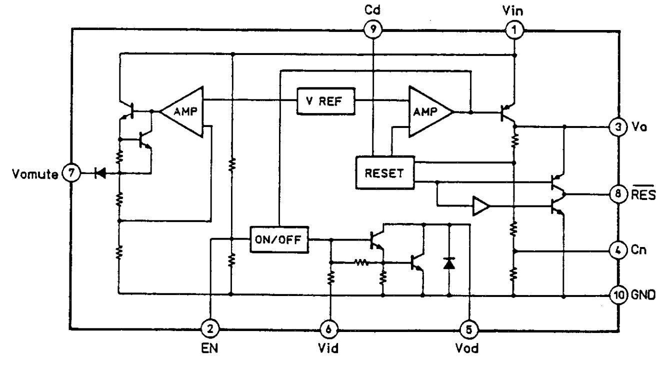
START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
GND
BALANCE ADJ
VOLTAGE ADJ
OUT CONTROL

• IC801 STK-4122MK2



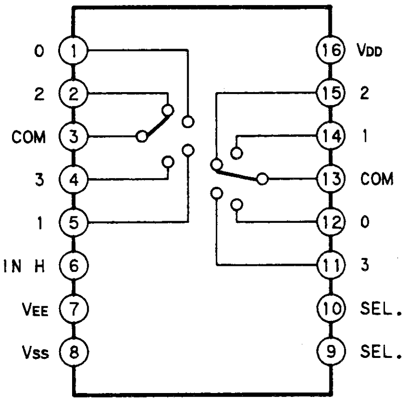
+IN
-IN
MUTE
+IN
-IN
GND
PROTECT
Vref OUT
Vref IN
BOOT STRAP
V-
OUT
OUT
BOOT STRAP

• IC999 LA5601



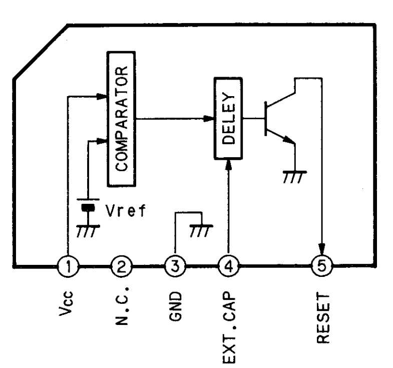
Cd
Vin
AMP
V REF
AMP
RESET
ON/OFF
Vo
RES
Cn
GND
Vomute
EN
Vid
Vod

• IC705 MC14052BCP



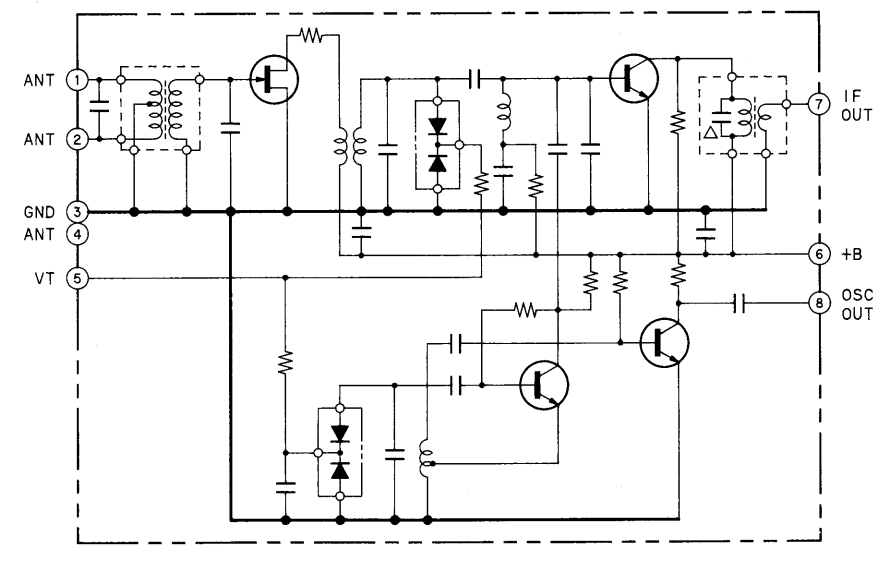
0
2
COM
3
1
IN H
VEE
VSS
VDD
2
1
COM
0
3
SEL.A
SEL.B

• IC706 M51953BL



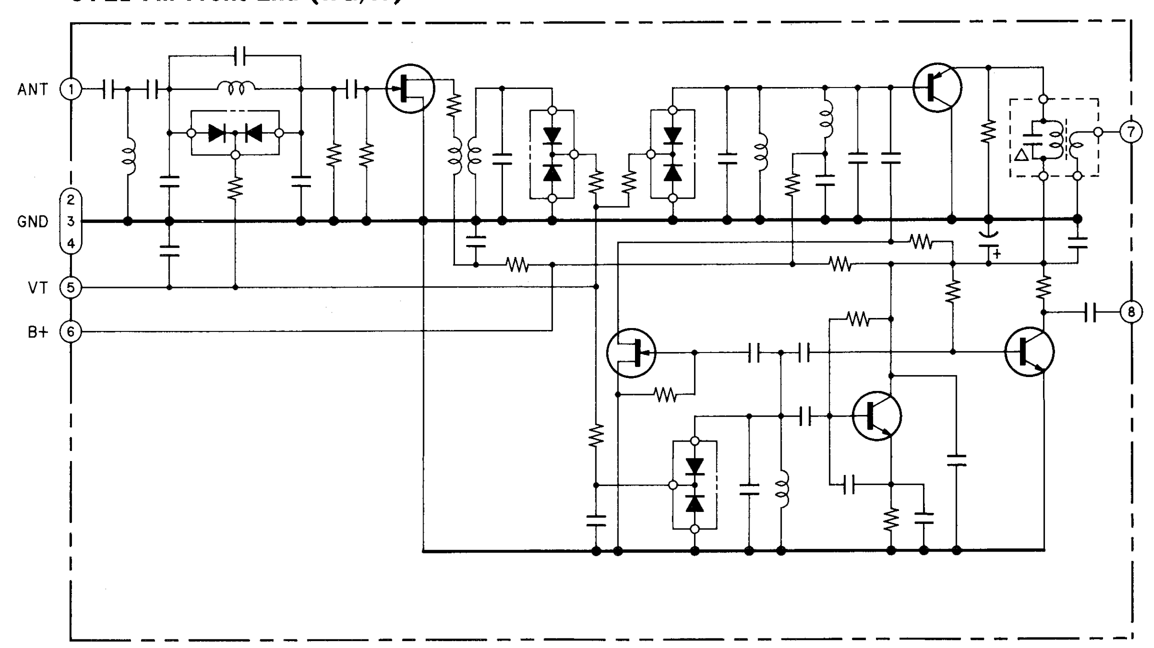
COMPARATOR
DELEY
Vref
Vcc
N.C.
GND
EXT.CAP
RESET

• FE1 FM Front End (US, CND, AEP, UK, E, EA, AUS)



ANT
ANT
GND
ANT
VT
IF OUT
+B
OSC OUT

• FE1 FM Front End (WG, IT)



ANT
GND
VT
B+
IF OUT
OSC OUT

6-8. PIN FUNCTIONS

- **IC604 Deck Controller (M50964-212SP)**

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1</td><td>V_{CC}</td><td>—</td><td>V_{CC}</td><td>POWER 5±0.5V</td></tr>
<tr><td>2</td><td>AV_{SS}</td><td>—</td><td>AV_{SS}</td><td>Analogue system GND</td></tr>
<tr><td>3</td><td>VREF</td><td>I</td><td>VREF</td><td>Analogue system reference voltage input</td></tr>
<tr><td>4</td><td>D•A</td><td>O</td><td>D•A</td><td>D/A conversion output (Not used: open)</td></tr>
<tr><td>5</td><td>PWM</td><td>O</td><td>PWM</td><td>PWM output (Not used: GND)</td></tr>
<tr><td>6</td><td>P63</td><td>O</td><td>$\overline{\mathrm{AMS}}$</td><td>AMS LED indication output</td></tr>
<tr><td>7</td><td>P62</td><td>O</td><td>$\overline{\mathrm{A\ FWD}}$</td><td>Deck A FWD LED output</td></tr>
<tr><td>8</td><td>P61</td><td>O</td><td>$\overline{\mathrm{BIAS\ IV}}$</td><td>TYPE IV bias oscillation output</td></tr>
<tr><td>9</td><td>P60</td><td>O</td><td>$\overline{\mathrm{BIAS\ II}}$</td><td>TYPE II bias oscillation output</td></tr>
<tr><td>10</td><td>P47</td><td>O</td><td>$\overline{\mathrm{A\ REV}}$</td><td>Deck A RVS LED output</td></tr>
<tr><td>11</td><td>P46</td><td>O</td><td>$\overline{\mathrm{A\ REV}}$</td><td>Deck A RVS LED output</td></tr>
<tr><td>12</td><td>AN5</td><td>I</td><td>B HALF</td><td>Beck B record prevention claw A, B detection input (Analogue)
<table>
<tr><th>Voltage (V)</th><th>1V</th><th>1.9V</th><th>2.8V</th><th>3.9V</th><th>5V</th></tr>
<tr><td>Half</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr>
<tr><td>Claw A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr>
<tr><td>Claw B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>13</td><td>AN4</td><td>I</td><td>KEY3</td><td rowspan="3">KEY input
<table>
<tr><th>Voltage (V)</th><th>0</th><th>0.3</th><th>0.7</th><th>1.2</th><th>1.7</th><th>2.3</th><th>2.8</th><th>3.4</th><th>4.0</th><th>4.5</th><th>5.0</th></tr>
<tr><td>KEY 1</td><td>B ■</td><td>B ❚❚</td><td>B ▶</td><td>B ◀</td><td>B ○</td><td>A ◀◀</td><td>A ▶▶</td><td></td><td>DD B</td><td>DD C</td><td>OFF</td></tr>
<tr><td>KEY 2</td><td>A ■</td><td>A ❚❚</td><td>A ▶</td><td>A ◀</td><td></td><td>B ◀◀</td><td>B ▶▶</td><td>B ●</td><td>🔁</td><td>RELAY</td><td>OFF</td></tr>
<tr><td>KEY 3</td><td>AMS</td><td></td><td>H DUB</td><td>N DUB</td><td>CD SYNC</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>14</td><td>AN3</td><td>I</td><td>KEY2</td></tr>
<tr><td>15</td><td>AN2</td><td>I</td><td>KEY1</td></tr>
<tr><td>16</td><td>P41</td><td>O</td><td>$\overline{\mathrm{B\ FWD}}$</td><td>Deck B FWD LED output</td></tr>
<tr><td>17</td><td>P40</td><td>O</td><td>$\overline{\mathrm{B\ REV}}$</td><td>Deck B REV LED output</td></tr>
<tr><td>18</td><td>P37</td><td>O</td><td>$\overline{\mathrm{A\ FWD}}$</td><td>Deck A FWD LED output</td></tr>
<tr><td>19</td><td>P36</td><td>O</td><td>$\overline{\mathrm{B\ PAUSE}}$</td><td>Deck B PAUSE LED output</td></tr>
<tr><td>20</td><td>P35</td><td>O</td><td>$\overline{\mathrm{B\ REC}}$</td><td>Deck B REC LED output</td></tr>
<tr><td>21</td><td>P34</td><td>O</td><td>DOLBY $\overline{\mathrm{B}}$/C</td><td>Dolby $\overline{\mathrm{B}}$/C output</td></tr>
<tr><td>22</td><td>P33</td><td>O</td><td>DOLBY $\overline{\mathrm{ON}}$/OFF</td><td>Dolby $\overline{\mathrm{ON}}$/OFF output</td></tr>
<tr><td>23</td><td>P32</td><td>I</td><td>SIRCS</td><td>SIRCS input or AUDIO BUS reverse input</td></tr>
<tr><td>24</td><td>P31</td><td>O</td><td>$\overline{70}$/120</td><td>Playback EQ output for playing deck</td></tr>
<tr><td>25</td><td>P30</td><td>O</td><td>AUB OUT</td><td>AUDIO BUS output</td></tr>
<tr><td>26</td><td>INT1</td><td>I</td><td>AUB IN</td><td>AUDIO BUS normal input</td></tr>
<tr><td>27</td><td>CNVSS</td><td>—</td><td>CNVSS</td><td>GND</td></tr>
<tr><td>28</td><td>$\overline{\mathrm{RESET}}$</td><td>I</td><td>$\overline{\mathrm{RESET}}$</td><td>Microcomputer reset input</td></tr>
<tr><td>29</td><td>XIN</td><td>I</td><td>XIN</td><td>Clock input (4MHz)</td></tr>
<tr><td>30</td><td>X_O</td><td>O</td><td>X_O</td><td>Clock output (4MHz)</td></tr>
<tr><td>31</td><td>Φ</td><td>O</td><td>Φ</td><td>Not used (open)</td></tr>
</table>

Pin No.	Pin Name	I/O	Symbol	Description
32	V_{SS}	—	V_{SS}	GND
33	P57	I	$\overline{\mathrm{TEST}}$	Electrical adjustment test mode setting
34	P56	I	TYPE IV	TYPE IV switch input
35	P55	I	B70/$\overline{120}$	Deck B TYPE II switch input
36	P54	I	B SHUT	Deck B Reel table signal input
37	P53	I	A70/$\overline{120}$	Deck A TYPE II switch input
38	P52	I	A SHUT	Deck B Reel table signal input
39	P51	I	$\overline{\mathrm{A\ HALF}}$	Deck A Half switch input
40	P50	I	AMS IN	AMS signal input
41	P17	O	$\overline{\mathrm{M\ MUTE}}$	Meter mute output
42	P16	O	$\overline{\mathrm{L\ MUTE}}$	Line mute output
43	P15	O	$\overline{\mathrm{PASS}}$	PASS AMP change output
44	P14	O	$\overline{\mathrm{REC}}$/PB	Dolby IC $\overline{\mathrm{REC}}$/PB select output
45	P13	O	$\overline{\mathrm{AMS}}$/BS	AMS AMP characteristics change ouptut
46	P12	O	AMS A/$\overline{\mathrm{B}}$	AMS AMP input Deck A/$\overline{\mathrm{B}}$ select output
47	P11	O	SEL A/$\overline{\mathrm{B}}$	Dolby IC PB input Deck A/$\overline{\mathrm{B}}$ select output
48	P10	O	$\overline{\mathrm{BIAS\ I}}$	TYPE I bias oscillation output
49	P07	O	$\overline{\mathrm{RELAY}}$	REC/PB change relay output
50	P06	O	$\overline{\mathrm{PMB}}$	Deck B plunger hold output
51	P05	O	$\overline{\mathrm{KICK\ B}}$	Deck B plunger kick output
52	P04	O	$\overline{\mathrm{PMA}}$	Deck A plunger hold output
53	P03	O	$\overline{\mathrm{KICK\ A}}$	Deck A plunger kick output
54	P02	O	B H/$\overline{\mathrm{L}}$	Deck B capstan motor speed select
55	P01	O	A H/$\overline{\mathrm{L}}$	Deck A capstan motor speed select
56	P00	O	M $\overline{\mathrm{ON}}$/OFF	Capstan motor $\overline{\mathrm{ON}}$/OFF
57	P27	O	REC MUTE	REC MUTE output
58	P26	O	B SCHMITT	Deck B reel table schmitt output
59	P25	O	A SCHMITT	Deck A reel table schmitt output
60	P24	O	$\overline{\mathrm{H\ DUB}}$	High Speed Dubbing LED output
61	P23	O	$\overline{\mathrm{N\ DUB}}$	Normal Speed Dubbing LED output
62	P22	O	$\overline{\mathrm{CD\ DUB}}$	Auto CD Synchro LED output
63	P21	I	$\overline{\mathrm{AMS\ AVIRABLE}}$	Deck A PAUSE LED output
64	P20	O	$\overline{\mathrm{SIRCS}}$/AUB	$\overline{\mathrm{SIRCS}}$/AUDIO BUS mode select

[TEST MODE]

When making pin ㉝ low (connect TP601 to ground with jumper wire), following function operates.

1. Source monitor
   Release the line mute while recording.

2. High speed playback
   On playing, while pressing HIGH SPEED (DUBBING) button, high speed playback operates.
3. Record memory stop
   Using DIRECTION MODE switch ⇄, returns to the recording start point and stops or plays.

● IC505 Display Control (μPD75212)

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
1	S3	O	H	Segment, keyscan output terminals	Low
2	S2				
3	S1				
4	S0				
5	INT4	I	L	HOLD input	input
6	SCK	O	—	CLOCK (TC9217P T-BUS)	
7	SO	I/O	—	DATA (TC9217P T-BUS)	
8	PO3	I	L	SIGNAL input	
9	INT0	I	L	AUDIO-BUS input	input
10	INT1	I	Down	CD display data, timing	
11	P12	I	L	Remote control input	
12	P13	I	L	STEREO input	
13	P20	I	—	CD display data	input
14	P21				
15	P22				
16	P23				
17	P30	I	L	DUAL 2 input	input
18	P31	I	L	DUAL 1 input	
19	P32	O	L	POWER port	
20	P33	O	L	MUTING	Low
21	P60	I	H	Keyscan input	input
22	P61				
23	P62				
24	P63				
25	P40	O	—	FUNCTION A output	Low
26	P41	O	—	FUNCTION B output	
27	P42	O	H	AUDIO-BUS output	
28	P43	O	L	PERIOD (TC9217P T-BUS)	
29	PP0	—	—	Not used (open)	—
30	X1	—	—	Main system clock 4.19MHz	—
31	X2				
32	V_{SS}	—	—	GND terminal (0V)	—
33	XT1	—	—	Sub system clock 32.768kHz	—
34	XT2				
35	P50	O	L	DBFB	Low
36	P51	O	L	SURROUND	
37	P52	O	L	Volume DOWN	
38	P53	O	L	Volume UP	
39	RESET	I	L	System reset input terminal	—
40	T0	O	H	Digit output	Low
41	T1				

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
42	T2	O	H	Digit output	Low
43	T3				
44	T4				
45	T5				
46	T6				
47	T7				
48	T8				
49	T9	O	—	Not used (open)	Low
50	S15	O	H	Segment output	Low
51	S14				
52	S13				
53	S12				
54	S11	O	H	Segment output, specification distinction diode output	Low
55	S10				
56	V_{LOAD}	—	—	Pull-down resistor connect terminal of FIP driver	—
57	V_{PRE}	—	—	Power supply terminal of FIP driver output buffer	—
58	S9	O	H	Segment output	Low
59	S8				
60	S7				
61	S6				
62	S5	O	H	Segment, keyscan output teminal	Low
63	S4				
64	V_{DD}	—	—	Power supply terminal (5V)	—

[KEY, DIODE MATRIX]

	Key						Diode	
	S5	S4	S3	S2	S1	S0	S10	S11
P60	CLOCK	TIMER CONTROL	VIDEO	DUAL	STATION UP	STATION DOWN	TIMER FUNCTION	A
P61	DISPLAY	SLEEP	TUNER	AUTO/ MANUAL	SHIFT	ENTER	VIDEO/ PHONO	B
P62	POWER	TIMER SET	CD	SURROUND	BAND	MERORY	IF+50kHz	C
P63	—	—	TAPE	DBFB	TUNING UP	TUNING DOWN	IF−50kHz	—

1) Pressing the key twice is not allowed. (First pressing is preceded)
2) The remote control precedes the input with the key.
3) Input the diode in resetting and in releasing HOLD.

• IC201 CD Controller (μPD75112CW)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{INSW}}$	I	Disk tray clamp-end input
2	$\overline{\text{OUTSW}}$	I	Disk tray open-end input
3	(TIMER)	I	Timer start input
4	BSIN	I	Audio bus input
5	Not Used	I	GND
6	Not Used	I	GND
7	Not Used	I	GND
8	Not Used	I	GND
9	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
10	Not Used	I	GND
11	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
12	Not Used	I	GND
13	Not Used	I	GND
14	Not Used	I	GND
15	SUBQ	I	Q data serial input from CXD2500Q
16	Not Used	O	OPEN
17	SQCLK	O	Sub-code Q data read-in clock output for CXD2500Q
18	SCOR	I	Sub-code synchro S0 and S1 detect input
19	Not Used	O	OPEN
20	Not Used	O	OPEN
21	PLAYL	O	Play LED ON/OFF output
22	PAUSL	O	Pause LED ON/OFF output
23	KEY3	I	Key data input
24	KEY2	I	Key data input
25	KEY1	I	Key data input
26	KEY0	I	Key data input
27	DG3	O	Key-scan digit output
28	DG2	O	Key-scan digit output
29	DG1	O	Key-scan digit output
30	DG0	O	Key-scan digit output
31	Not Used	I	+5V
32	VDD	I	+5V
33	Not Used	O	OPEN
34	Not Used	O	OPEN
35	Not Used	O	OPEN
36	Not Used	O	On time 1 track jump, tracking drive is inversed output for CXA1372Q
37	DPDAT3	O	Display data output for tuner amp micon
38	DPDAT2	O	Display data output for tuner amp micon
39	DPDAT1	O	Display data output for tuner amp micon
40	DPDAT0	O	Display data output for tuner amp micon
41	DPCLK	O	Display data transmission clock output for tuner amp micon
42	PRGL	O	Serial data latch pulse output for digital filter CXD2551P
43	PRGCK	O	Serial clock output for digital filter CXD2551P
44	PRGD	O	Serial data output for digital filter CXD2551P

Pin No.	Pin Name	I/O	Description
45	$\overline{\text{RESET}}$	I	System reset input terminal (LOW ACTIVE)
46	X2	I	System clock input 4.19MHz
47	X1	I	System clock input 4.19MHz
48	DFCTSW	O	From focus in till spindle kick is ON except then is OFF.
49	AMUTE	O	Muting ON/OFF output
50	BSOUT	O	Audio bus output
51	AFADJ	I	Test mode input, and on time POWER "L" is test movement of every kind
52	LDON	O	Laser diode ON/OFF output
53	XLT	O	Serial data latch pulse output for CXD2500Q
54	CLK	O	Serial clock output for CXD2500Q
55	DATA	O	Serial data output for CXD2500Q
56	Not Used	I	GND
57	ADJ	I	Test mode input, "L" is GFS no check.
58	GFS	I	GFS OK/No Good input
59	FOK	I	Focus OK/No Good input
60	Not Used	O	OPEN
61	Not Used	O	OPEN
62	LODOUT	O	Disc tray loading-out output
63	LODIN	O	Disc tray loading-in output
64	VSS	I	GND

SECTION 7
EXPLODED VIEWS

NOTE:

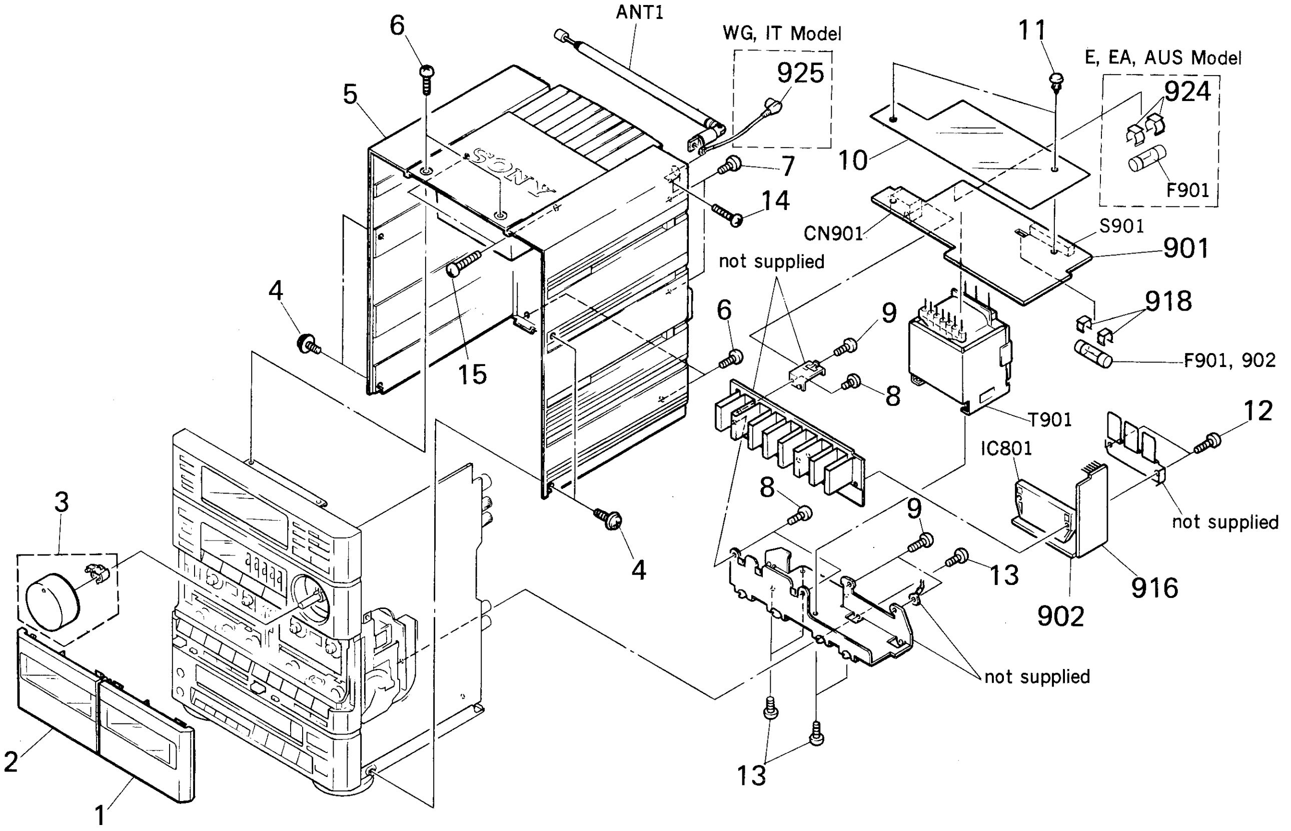
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:

  (RED) ... KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts' Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

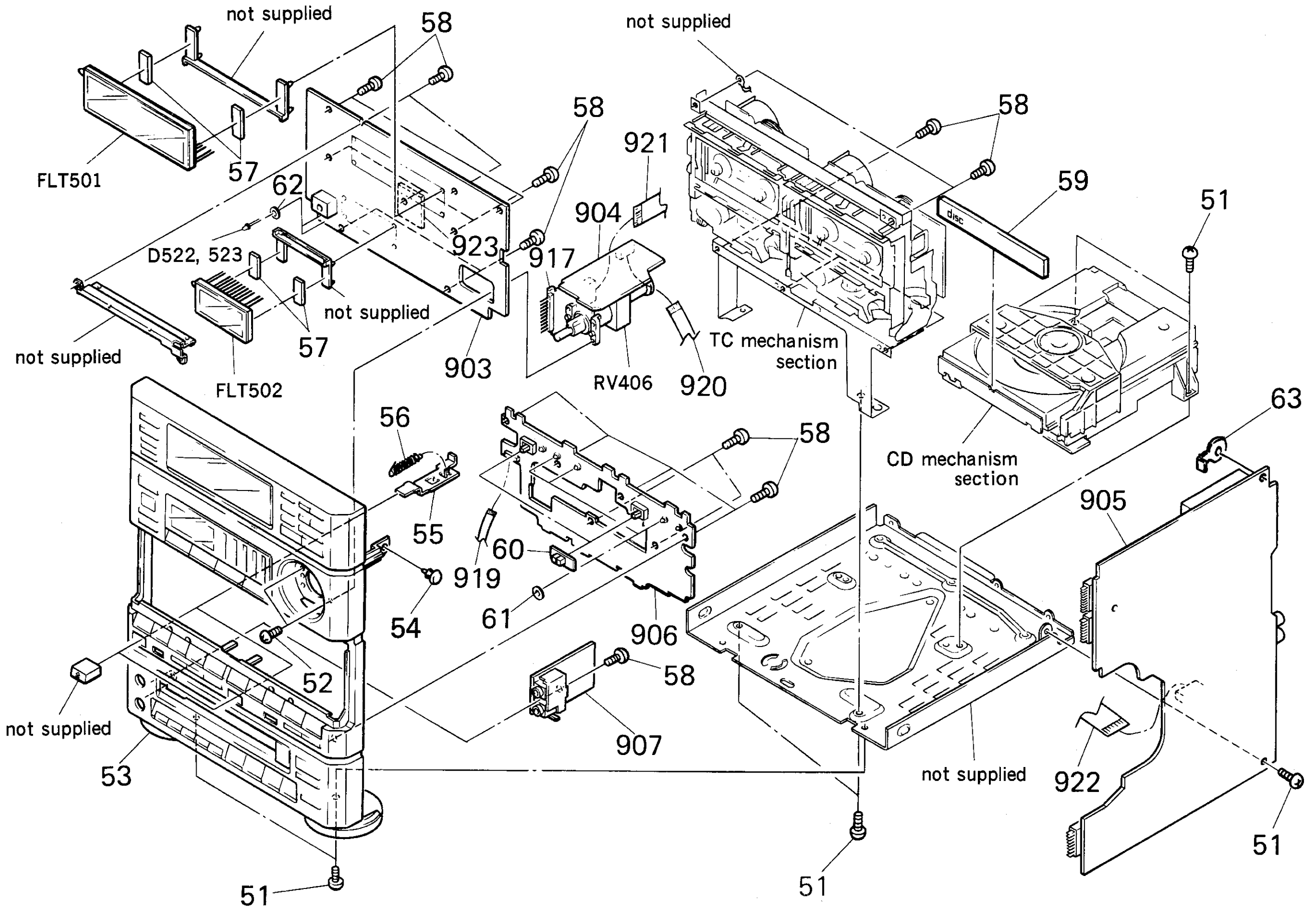
7-1. CASE, POWER SECTION



No.	Part No.	Description	Remarks
1	X-4936-809-1	LID (B) ASSY, CASSETTE	
2	X-4936-808-1	LID (A) ASSY, CASSETTE	
3	X-4936-803-1	KNOB (VOLUME) ASSY	
4	3-704-366-01	SCREW (CASE) (M3X8)	
5	X-4936-802-1	(H7:AEP,WG,IT)...CASE ASSY	
	X-4936-804-1	(E,EA,AUS).......CASE ASSY	
	4-936-804-11	(H1500)..........CASE	
6	7-682-549-04	(AEP,EA)...SCREW +BVTT 3X10 (S)	
	7-685-873-09	(EXCEPT FOR AEP,EA)..SCREW +BVTT 3X10(S)	
7	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
8	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
9	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
10	*4-936-816-01	COVER (INSULATING)	
11	4-812-134-31	RIVET NYLON, 3.5	
12	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
13	7-682-547-04	SCREW +BVTT 3X6 (S)	
14	7-682-549-04	(H7)....SCREW +BVTT 3X10 (S)	
15	7-685-649-79	(H7)...SCREW +BVTP 3X14 TYPE2 N-S	

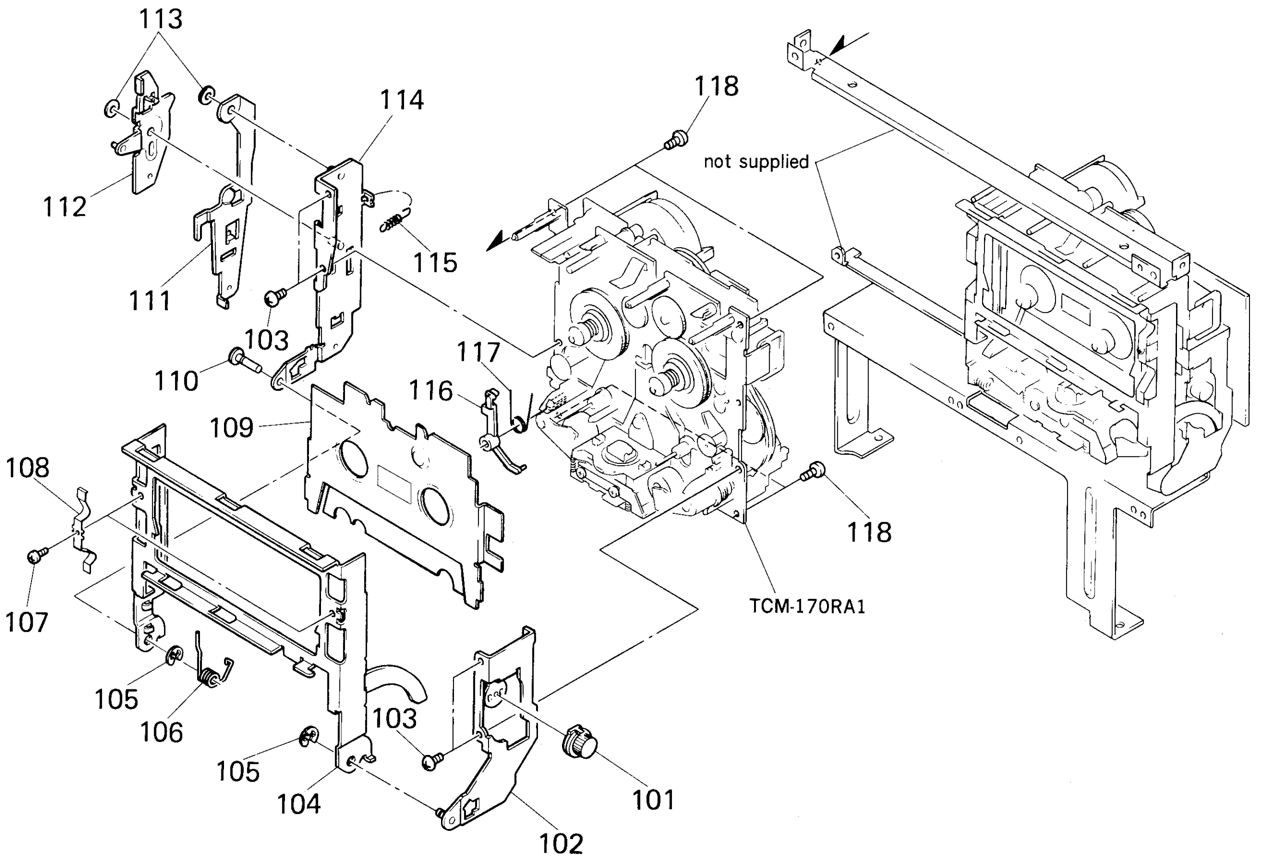
No.	Part No.	Description	Remarks
901	*1-634-474-11	PC BOARD, TRANSFORMER	
902	*1-634-479-11	PC BOARD, POWER	
916	*1-634-480-11	PC BOARD, CAPACITOR	
918	1-533-213-31	HOLDER, FUSE	
924	*1-533-213-31	(E,EA,AUS)...HOLDER, FUSE	
925	*1-562-908-11	(WG,IT)...CONNECTOR, FEMALE (NO SHIELD)	
ANT1	1-501-270-00	(H7)...ANTENNA, TELESCOPIC	
CN901⚠	.1-526-931-11	(AEP,UK,WG,IT)...INLET, AC (~AC IN)	
CN901⚠	.1-526-930-11	(US,Canadian,E,EA,AUS)...INLET, AC (~AC IN)	
F901 ⚠	.1-532-215-00	(E,EA,AUS)...FUSE, TIME-LAG (0.8A)	
F901 ⚠	.1-532-555-11	(US,Canadian)...FUSE, GLASS TUBE (1.6A)	
F902 ⚠	.1-532-259-11	(EXCEPT FOR US,Canadian)...FUSE, GLASS TUBE (1.6A)	
IC801	8-749-900-95	IC STK-4122MK2	
S901 ⚠	.1-571-722-11	(E,EA,AUS)...SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR)	
T901 ⚠	.1-449-898-11	(E,EA,AUS).......TRANSFORMER, POWER	
T901 ⚠	.1-449-899-11	(AEP,UK,WG,IT)...TRANSFORMER, POWER	
T901 ⚠	.1-449-900-11	(US,Canadian)....TRANSFORMER, POWER	

7-2. FRONT PANEL, MAIN BOARD SECTION


not supplied
58
not supplied
58
921
58
59
51
FLT501
57
62
904
D522, 523
923
917
not supplied
not supplied
57
903
RV406
920
TC mechanism section
FLT502
63
56
58
CD mechanism section
905
55
60
919
54
61
906
58
52
not supplied
907
53
not supplied
922
51
51
51

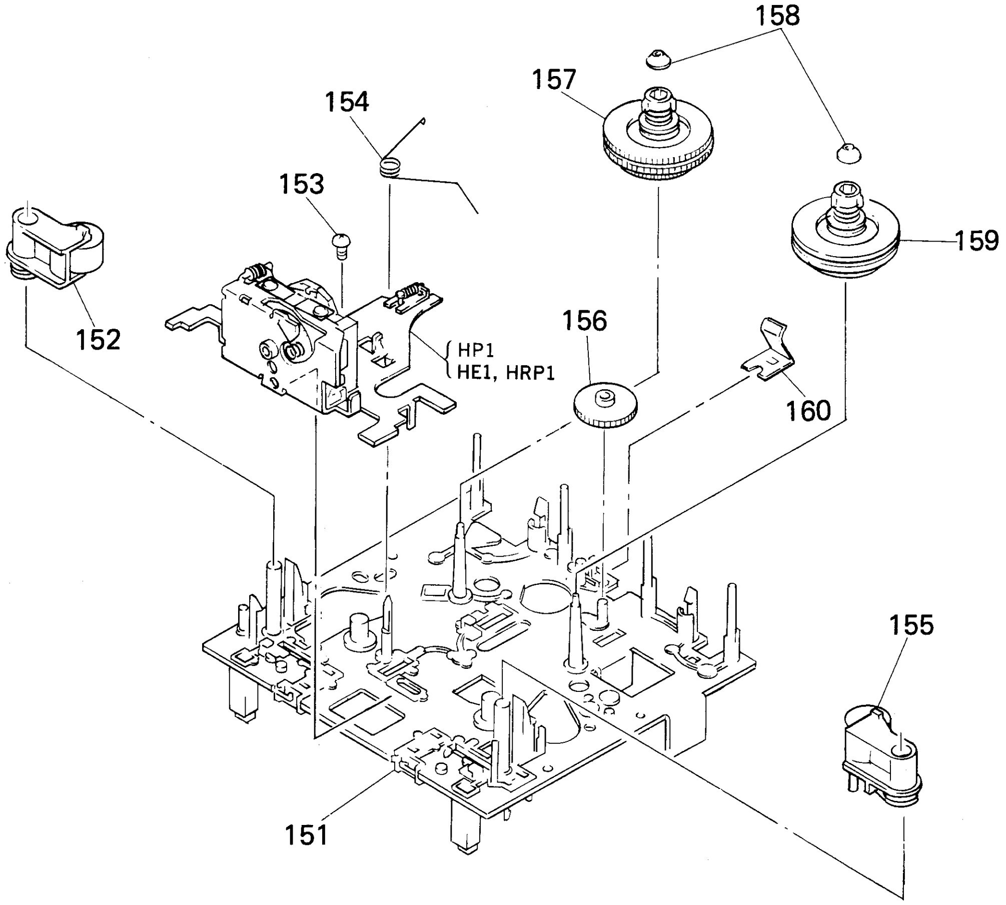
No.	Part No.	Description	Remarks
51	7-682-547-04	SCREW +BVTT 3X6 (S)	
52	7-682-548-04	SCREW +BVTT 3X8 (S)	
53	X-4936-810-1	(E,EA,AUS)..........PANEL ASSY, FRONT	
	X-4936-811-1	(H7:AEP,WG,IT)......PANEL ASSY, FRONT	
	X-4936-812-1	(H1500:AEP,UK,IT)...PANEL ASSY, FRONT	
	X-4936-813-1	(US,Canadian).......PANEL ASSY, FRONT	
54	4-812-134-31	RIVET NYLON, 3.5	
55	*4-936-807-01	(DECK B)...SLIDER (EJECT) (B)	
	*4-936-808-01	(DECK A)...SLIDER (EJECT) (A)	
56	3-489-099-11	SPRING, TENSION	
57	*4-932-810-01	CUSHION (FL)	
58	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
59	4-936-833-01	PANEL, LOADING	
60	3-349-054-01	KNOB (SLIDE)	
61	3-831-441-XX	CUSHION, BLIND	
62	3-350-679-11	WASHER, FIBER	
63	*4-925-530-01	(EXCEPT FOR US,Canadian)...PLATE, GROUND	
903	*A-4334-168-A	(AUS)...........MOUNTED PCB, DISPLAY	
	*A-4334-169-A	(US,Canadian)...MOUNTED PCB, DISPLAY	
	*A-4334-170-A	(AEP,UK)........MOUNTED PCB, DISPLAY	
	*A-4334-171-A	(IT)............MOUNTED PCB, DISPLAY	
	*A-4334-172-A	(WG)............MOUNTED PCB, DISPLAY	
	*A-4334-178-A	(E,EA)..........MOUNTED PCB, DISPLAY	
904	*1-634-476-11	PC BOARD, VR	
905	*A-4334-160-A	(E,EA,AUS)......MOUNTED PCB, MAIN	
	*A-4334-161-A	(AEP,UK)........MOUNTED PCB, MAIN	
	*A-4334-162-A	(WG,IT).........MOUNTED PCB, MAIN	
	*A-4334-164-A	(US,Canadian)...MOUNTED PCB, MAIN	
906	*1-634-477-11	PC BOARD, SW	
907	*1-634-481-11	PC BOARD, JACK	
917	*1-634-475-11	PC BOARD, JUMPER	
919	1-575-675-11	WIRE, FLAT TYPE (14 CORE)	
920	1-575-674-11	WIRE, FLAT TYPE (8 CORE)	
921	1-575-672-11	WIRE, FLAT TYPE (13 CORE)	
922	1-575-673-11	WIRE, FLAT TYPE (15 CORE)	
923	*1-634-870-11	PC BOARD, SHIELD	
D522	8-719-312-81	DIODE SEL4914R-LC05	
D523	8-719-312-81	DIODE SEL4914R-LC05	
FLT501	1-519-577-11	INDICATOR TUBE, FLUORESCENT	
FLT502	1-519-578-11	INDICATOR TUBE, FLUORESCENT	
RV406	1-238-865-11	RES, VAR, CARBON (MOTOR) 100KX2 (VOLUME)(INCLUDING VOL LED)	

7-3. MD CHASSIS SECTION


113
114
118
not supplied
112
115
111
103
117
110
116
109
108
107
118
TCM-170RA1
105
106
103
105
104
101
102

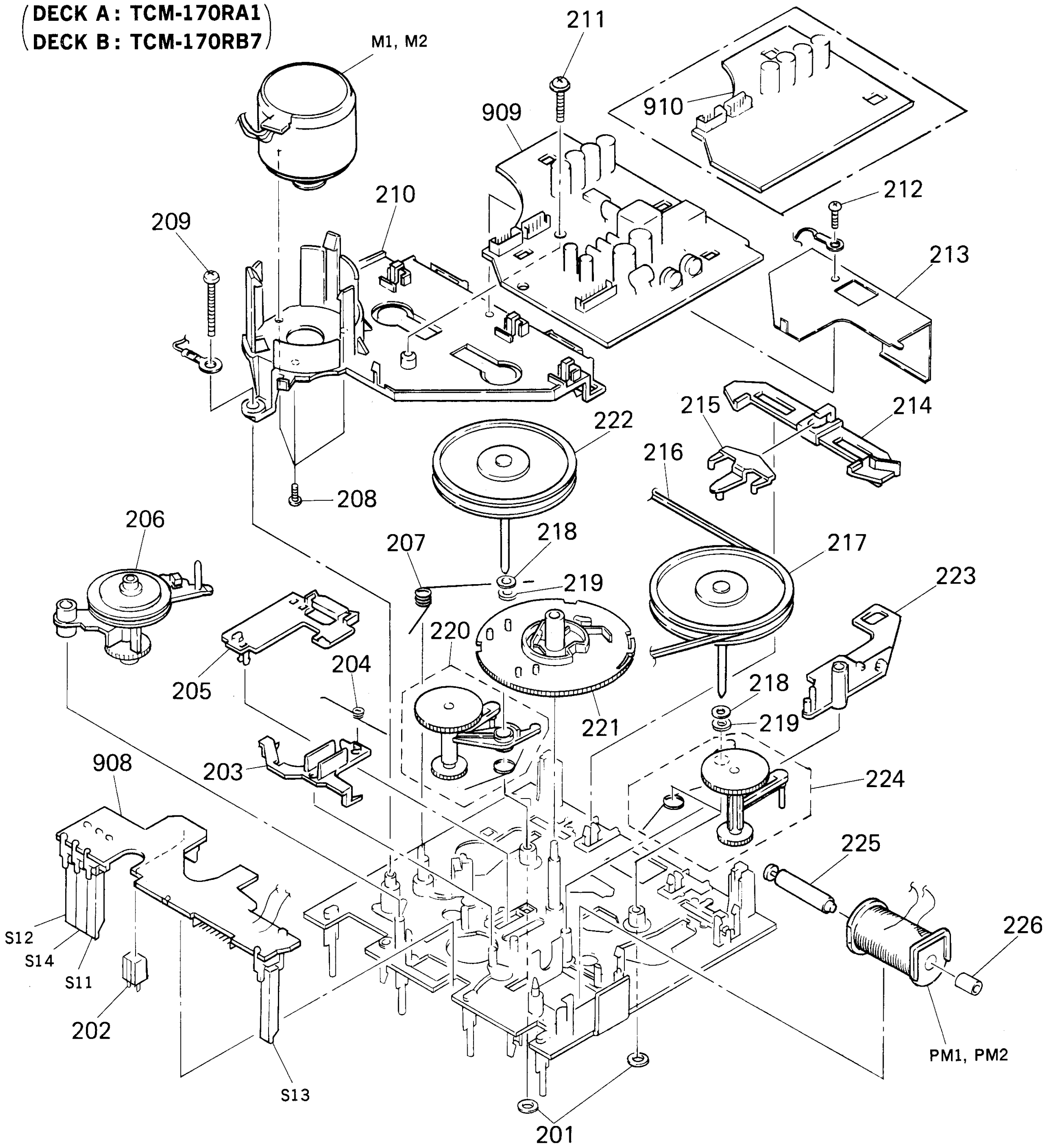
No.	Part No.	Description	Remarks
101	X-3340-185-1	GEAR (DAMPER) ASSY	
102	*X-3332-494-1	BRACKET (R) ASSY	
103	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
104	*3-340-150-01	HOLDER, CASSETTE	
105	7-624-105-04	RETAINING, RING E-2.3	
106	3-346-364-01	SPRING (LOADING), TORSION	
107	7-621-255-15	SCREW +PTT 2X3 (S)	
108	3-354-908-01	SPRING (CASSETTE RETAINER)	
109	*3-340-123-01	RETAINER, CASSETTE	
110	*3-346-334-01	SHAFT (HOLDER FITTING LEFT)	
111	*3-340-142-01	LEVER (EJECT)	
112	*X-3332-465-1	LEVER (LOCK) ASSY	
113	3-558-708-21	WASHER, STOPPER	
114	*X-3332-466-1	BRACKET (LEFT) ASSY	
115	3-343-474-01	SPRING, TENSION	
116	3-343-476-01	LEVER (EJECT SAFETY LEVER)	
117	3-343-477-01	SPRING, TORSION (EJECT SAFTY)	
118	7-621-770-67	SCREW +PTT 2.6X6 (S)	

7-4. MECHANISM DECK SECTION (1)
(DECK A : TCM-170RA1)
(DECK B : TCM-170RB7)



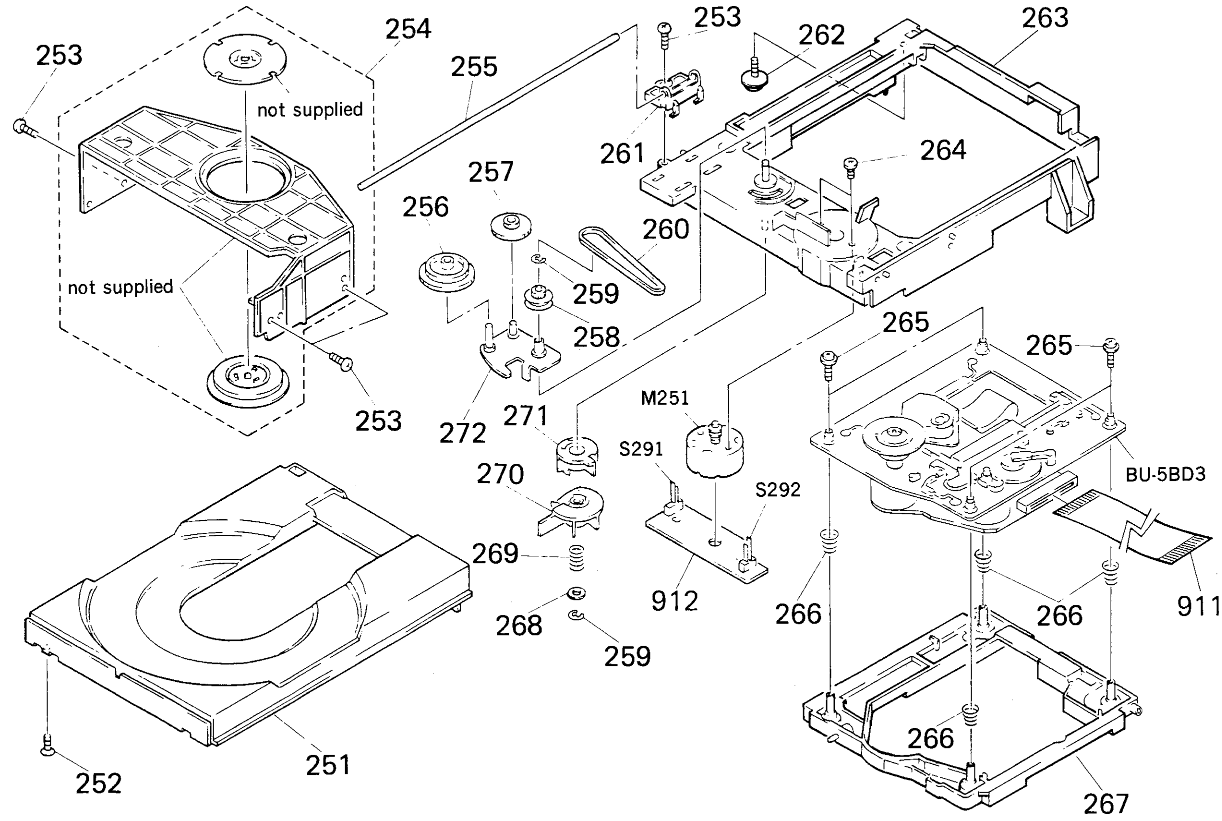
No.	Part No.	Description	Remarks
151	X-3343-439-1	CHASSIS ASSY, MECHANICAL	
152	X-3343-456-1	LEVER (PINCH R) ASSY	
153	7-621-773-86	SCREW +BVTT 2.6X4 (S)	
154	3-343-401-01	SPRING, TORSION	
155	X-3343-455-1	LEVER (PINCH F) ASSY	
156	3-343-411-01	GEAR (FF GEAR)	
157	X-3343-415-1	TABEL (REV) ASSY, REEL	
158	3-343-439-01	CAP (REEL TABLE)	
159	X-3343-401-1	TABEL ASSY, REEL	
160	3-343-420-01	SPRING, LEAF	
HP1	A-2003-503-A	(DECK A)...PC BOARD ASSY, HEAD (PB)	
HRP1 HE1	A-2003-504-A	(DECK B)...CHASSIS ASSY, HEAD (PB/REC/ERASE)	

7-5. MECHANISM DECK SECTION (2)
(DECK A : TCM-170RA1)
(DECK B : TCM-170RB7)


M1, M2
211
909
910
212
213
210
209
215
214
222
216
208
206
218
207
217
219
223
220
204
205
218
221
219
908
203
224
225
226
S12
S14
S11
202
S13
PM1, PM2
201

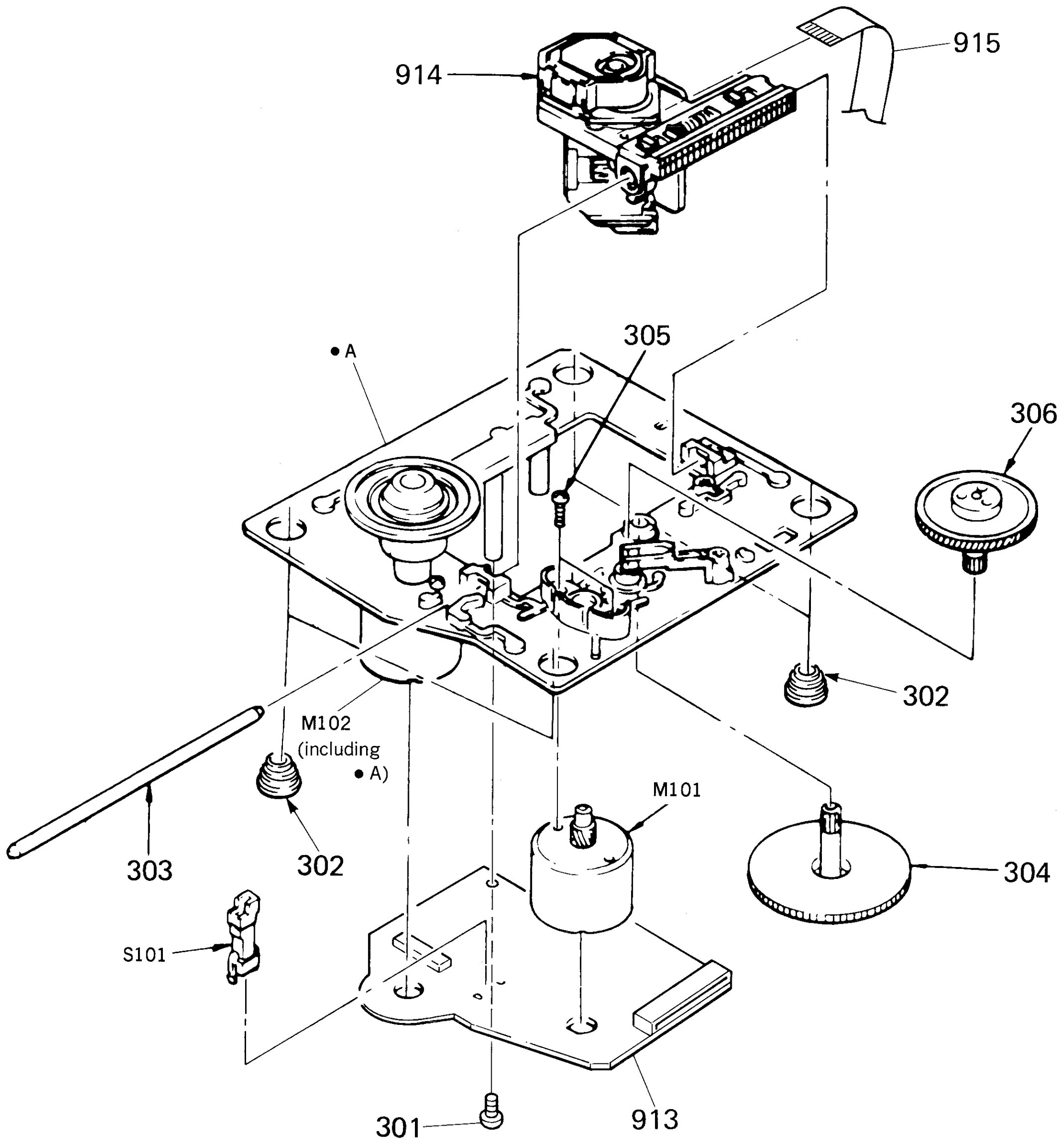
No.	Part No.	Description	Remarks
201	3-343-473-01	WASHER, NYLON	
202	3-343-419-01	HOLDER (S SENSER A)	
203	3-343-453-01	SLIDER (BRAKE PLATE)	
204	3-343-429-01	SPRING, TORSION	
205	3-343-461-01	SLIDER	
206	X-3343-414-1	LAVER (FR ARM) ASSY	
207	3-343-430-01	SPRING, TORSION	
208	7-627-556-28	SCREW +P 2.6X3.5	
209	3-355-801-01	SCREW (BTP 2X18)	
210	*X-3343-407-1	BASE (THRUST RETAINER) ASSY	
211	3-343-404-01	SCREW (PTPWH 2X12)	
212	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
213	3-343-480-01	PLATE, SHIELD	
214	3-343-457-01	SLIDER (REVERSE SLIDER)	
215	3-343-462-01	LEVER	
216	3-313-816-00	BELT (CAPSTAN BELT SQUARE)	
217	X-3343-411-6	FLYWHEEL COMPLETE ASSY	
218	4-605-835-11	WASHER (2.6), POLYSLIDER	
219	3-307-482-00	WASHER, LUMILER	
220	X-3343-454-1	LEVER (TU-R) ASSY	
221	3-343-470-01	GEAR (CAM GEAR)	
222	X-3343-416-7	FLYWHEEL (REV) COMPLETE ASSY	
223	3-343-493-01	LEVER (PM LEVER)	
224	X-3343-453-1	LEVER (TU-F) ASSY	
225	*3-343-425-01	ARBOR (MOVABLE IRON ARBOR), IRON	
226	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
908	*1-624-148-11	(DECK A)...PC BOARD, LEAF SW (A)	
	*1-624-148-11	(DECK B)...PC BOARD, LEAF SW (B)	
909	*1-624-146-11	(DECK B)...PC BOARD, MD-B	
910	*1-624-147-11	(DECK A)...PC BOARD, MD-A	
M1	X-3343-447-1	(DECK A)...MOTOR ASSY	
M2	X-3343-447-1	(DECK B)...MOTOR ASSY	
PM1	1-454-456-11	(DECK A)...SOLENOID, PLUNGER	
PM2	1-454-456-11	(DECK B)...SOLENOID, PLUNGER	

7-6. CD SECTION (1)
(CDM13A-5BD3)


253
254
255
not supplied
not supplied
253
253
262
263
261
264
257
256
260
259
258
272
271
270
269
268
259
M251
S291
S292
912
265
265
BU-5BD3
266
266
911
266
267
251
252

No.	Part No.	Description	Remarks
251	4-929-732-01	TABLE, DISK	
252	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
253	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
254	A-4604-219-A	HOLDER (MG) ASSY	
255	4-929-721-01	SHAFT	
256	4-927-620-01	GEAR (P)	
257	4-927-628-01	GEAR (C)	
258	4-929-724-01	PULLEY (B)	
259	7-624-105-04	STOP RING 2.3, TYPE -E	
260	4-927-649-01	BELT	
261	4-929-723-01	GUIDE (T)	
262	*4-917-583-21	BRACKET, YOKE	
263	X-4929-709-1	SHASSIS (MD) ASSY	
264	7-621-775-10	SCREW +B 2.6X4	
265	4-933-134-01	SCREW (+PTPWH M2.6X6)	
266	4-917-541-01	SPRING (B)	
267	4-929-747-01	HOLDER (BU)	
268	4-927-654-01	WASHER (LIMITER)	
269	3-659-338-00	SPRING, COMPRESSION	
270	4-929-729-01	CAM (B)	
271	4-929-727-01	CAM (A)	
272	X-4929-703-1	ARM ASSY, SWING	
911	1-535-832-11	(EXCEPT FOR AUS)...JUMPER, FILM (WITH TERMINAL)	
912	1-634-461-11	PC BOARD, LOADING	
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

7-7. CD SECTION (2)
(BU-5BD3)



Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No.	Description	Remarks
301	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
302	4-933-126-01	INSULATOR (A)	
303	4-917-565-01	SHAFT, SLED	
304	4-917-564-01	GEAR (P), FLATNESS	
305	7-621-255-15	SCREW +P 2X3	
306	4-917-567-01	GEAR (M)	
913	*A-4617-371-A	MOUNTED PCB, BD	
914	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A	
915	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
M101	X-4917-504-1	MOTOR ASSY (SLED)	
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)	
S101	1-572-085-11	(BD)...SWITCH, LEAF (LIMIT IN)	

SECTION 8
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
901	*1-634-474-11	PC BOARD, TRANSFORMER
902	*1-634-479-11	PC BOARD, POWER
903	*A-4334-168-A	(AUS)...........MOUNTED PCB, DISPLAY
	*A-4334-169-A	(US,Canadian)...MOUNTED PCB, DISPLAY
	*A-4334-170-A	(AEP,UK)........MOUNTED PCB, DISPLAY
	*A-4334-171-A	(IT)...........MOUNTED PCB, DISPLAY
	*A-4334-172-A	(WG)...........MOUNTED PCB, DISPLAY
	*A-4334-178-A	(E,EA).........MOUNTED PCB, DISPLAY
904	*1-634-476-11	PC BOARD, VR
905	*A-4334-160-A	(E,EA,AUS)......MOUNTED PCB, MAIN
	*A-4334-161-A	(AEP,UK)........MOUNTED PCB, MAIN
	*A-4334-162-A	(WG,IT).........MOUNTED PCB, MAIN
	*A-4334-164-A	(US,Canadian)...MOUNTED PCB, MAIN
906	*1-634-477-11	PC BOARD, SW
907	*1-634-481-11	PC BOARD, JACK
908	*1-624-148-11	(DECK A)...PC BOARD, LEAF SW (A)
	*1-624-148-11	(DECK B)...PC BOARD, LEAF SW (B)
909	*1-624-146-11	(DECK B)...PC BOARD, MD-B
910	*1-624-147-11	(DECK A)...PC BOARD, MD-A
911	1-535-832-11	(EXCEPT FOR AUS)...JUMPER, FILM (WITH TERMINAL)
912	1-634-461-11	PC BOARD, LOADING
913	*A-4617-371-A	MOUNTED PCB, BD
914	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A
915	1-575-001-11	WIRE, FLAT TYPE (12 CORE)
916	*1-634-480-11	PC BOARD, CAPACITOR
917	*1-634-475-11	PC BOARD, JUMPER
918	1-533-213-31	HOLDER, FUSE
919	1-575-675-11	WIRE, FLAT TYPE (14 CORE)
920	1-575-674-11	WIRE, FLAT TYPE (8 CORE)
921	1-575-672-11	WIRE, FLAT TYPE (13 CORE)
922	1-575-673-11	WIRE, FLAT TYPE (15 CORE)
923	*1-634-870-11	PC BOARD, SHIELD
924	*1-533-213-31	(E,EA,AUS)...HOLDER, FUSE
925	*1-562-908-11	(WG,IT)...CONNECTOR, FEMALE(NO SHIELD)
ANT1	1-501-270-00	(H7)...ANTENNA, TELESCOPIC
C1	1-162-195-31	(H7:AEP,E,EA,AUS) ...CERAMIC 4.7PF 10% 50V
C2	1-123-875-11	ELECT 10MF 20% 50V
C3	1-161-379-00	CERAMIC 0.01MF 30% 16V
C4	1-162-294-31	CERAMIC 0.001MF 10% 50V
C5	1-161-379-00	CERAMIC 0.01MF 30% 16V
C6	1-164-159-11	(E,EA,AUS)...CERAMIC 0.1MF 50V
C7	1-164-159-11	(EXCEPT FOR US,Canadian) ...CERAMIC 0.1MF 50V

Ref.No.	Part No.	Description
C8	1-161-379-00	(AEP,UK,WG,IT) ...CERAMIC 0.01MF 30% 16V
C9	1-102-120-00	(AEP,UK,WG,IT) ...CERAMIC 0.0018MF 10% 50V
C10	1-161-374-11	(AEP,UK,WG,IT) ...CERAMIC 0.0015MF 30% 16V
C22	1-102-947-00	(E,EA,AUS)...CERAMIC 10PF 0.5PF 50V
C23	1-136-162-00	(E,EA,AUS)...FILM 0.056PF 5% 50V
C24	1-136-161-00	(E,EA,AUS)...FILM 0.047PF 5% 50V
C41A	1-162-289-31	CERAMIC 390PF 10% 50V
C41B	1-162-289-31	CERAMIC 390PF 10% 50V
C42A	1-136-157-00	FILM 0.022MF 5% 50V
C42B	1-136-157-00	FILM 0.022MF 5% 50V
C43A	1-124-282-00	ELECT 22MF 20% 25V
C43B	1-124-282-00	ELECT 22MF 20% 25V
C44B	1-162-288-31	CERAMIC 330PF 10% 50V
C45B	⚠1-136-273-91	FILM 75PF 5% 630V
C47B	1-162-209-31	CERAMIC 27PF 5% 50V
C48A	1-162-217-31	CERAMIC 56PF 5% 50V
C48B	1-162-217-31	CERAMIC 56PF 5% 50V
C51	1-164-056-11	CERAMIC 27PF 5% 50V
C52	1-164-056-11	CERAMIC 27PF 5% 50V
C53	1-161-379-00	CERAMIC 0.01MF 30% 16V
C54	1-161-379-00	CERAMIC 0.01MF 30% 16V
C55	1-161-379-00	CERAMIC 0.01MF 30% 16V
C56	1-161-379-00	CERAMIC 0.01MF 30% 16V
C57	1-161-379-00	CERAMIC 0.01MF 30% 16V
C58	1-123-875-11	ELECT 10MF 20% 50V
C59	1-161-379-00	CERAMIC 0.01MF 30% 16V
C60	1-124-477-11	ELECT 47MF 20% 25V
C61	1-124-925-11	ELECT 2.2MF 20% 50V
C61A	1-162-289-31	CERAMIC 390PF 10% 50V
C61B	1-162-289-31	CERAMIC 390PF 10% 50V
C62	1-136-153-00	FILM 0.01MF 5% 50V
C62A	1-136-157-00	FILM 0.022MF 5% 50V
C62B	1-136-157-00	FILM 0.022MF 5% 50V
C63	1-124-463-00	ELECT 0.1MF 20% 50V
C63A	1-124-282-00	ELECT 22MF 20% 25V
C63B	1-124-282-00	ELECT 22MF 20% 25V
C64	1-124-902-00	(AEP,UK,WG,IT) ...ELECT 0.47MF 20% 50V
C64B	1-162-288-31	CERAMIC 330PF 10% 50V
C65	1-136-157-00	(AEP,UK,WG,IT) ...FILM 0.022MF 5% 50V
C65B	1-136-273-91	FILM 75PF 5% 630V

Ref.No.	Part No.	Description
C66	1-136-157-00	(AEP,UK,WG,IT) ...FILM 0.022MF 5% 50V
C67B	1-162-209-31	CERAMIC 27PF 5% 50V
C68A	1-162-217-31	CERAMIC 56PF 5% 50V
C68B	1-162-217-31	CERAMIC 56PF 5% 50V
C81	1-161-379-00	CERAMIC 0.01MF 30% 16V
C81A	1-126-101-11	ELECT 100MF 20% 16V
C81B	1-126-101-11	ELECT 100MF 20% 16V
C82	1-124-472-11	ELECT 470MF 20% 10V
C82A	1-126-101-11	ELECT 100MF 20% 16V
C82B	1-126-101-11	ELECT 100MF 20% 16V
C83	1-161-379-00	CERAMIC 0.01MF 30% 16V
C83B	1-124-791-11	ELECT 1MF 20% 50V
C84	1-123-875-11	ELECT 10MF 20% 50V
C84B	1-124-925-11	ELECT 2.2MF 20% 50V
C85	1-161-379-00	CERAMIC 0.01MF 30% 16V
C85B	1-130-480-00	MYLAR 0.0056MF 5% 50V
C86	1-162-282-31	CERAMIC 100PF 10% 50V
C86B	1-130-476-00	MYLAR 0.0027MF 5% 50V
C87	1-161-379-00	CERAMIC 0.01MF 30% 16V
C87B	1-130-476-00	MYLAR 0.0027MF 5% 50V
C88	1-123-875-11	ELECT 10MF 20% 50V
C88B	1-136-562-11	FILM 0.0082MF 5% 630V
C89	1-161-379-00	CERAMIC 0.01MF 30% 16V
C89B	1-161-494-00	CERAMIC 0.022MF 25V
C90	1-124-477-11	ELECT 47MF 20% 25V
C91	1-162-294-31	CERAMIC 0.001MF 10% 50V
C92	1-162-294-31	CERAMIC 0.001MF 10% 50V
C93	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C94	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C95	1-124-791-11	ELECT 1MF 20% 50V
C96	1-124-791-11	ELECT 1MF 20% 50V
C97	1-124-791-11	ELECT 1MF 20% 50V
C98	1-124-791-11	ELECT 1MF 20% 50V
C99	1-136-154-00	(EXCEPT FOR US,Canadian) ...FILM 0.012MF 5% 50V
C99	1-136-155-00	(US,Canadian) ...CERAMIC 0.015MF 5% 50V
C100	1-136-154-00	(EXCEPT FOR US,Canadian) ...FILM 0.012MF 5% 50V
C100	1-136-155-00	(US,Canadian) ...CERAMIC 0.015MF 5% 50V
C101	1-123-875-11	ELECT 10MF 20% 50V
C101	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C102	1-161-379-00	CERAMIC 0.01MF 30% 16V
C102	1-163-989-11	(BD)...CERAMIC CHIP 0.033MF 10% 25V
C103	1-124-463-00	ELECT 0.1MF 20% 50V
C103	1-126-094-11	(BD)...ELECT 4.7MF 20% 16V
C104	1-124-791-11	ELECT 1MF 20% 50V
C104	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C105	1-124-791-11	ELECT 1MF 20% 50V
C105	1-126-154-11	(BD)...ELECT 47MF 20% 6.3V
C106	1-124-791-11	ELECT 1MF 20% 50V
C106	1-126-154-11	(BD)...ELECT 47MF 20% 6.3V
C107	1-126-154-11	(BD)...ELECT 47MF 20% 6.3V
C107	1-162-282-31	(WG,IT)...CERAMIC 100PF 10% 50V
C108	1-162-211-31	(EXCEPT FOR WG,IT) ...CERAMIC 33PF 5% 50V
C108	1-162-291-31	(WG,IT)...CERAMIC 560PF 10% 50V
C108	1-163-038-00	(BD)... CERAMIC CHIP 0.1MF 25V
C109	1-161-379-00	CERAMIC 0.01MF 30% 16V
C109	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C110	1-161-379-00	CERAMIC 0.01MF 30% 16V
C110	1-163-989-11	(BD)...CERAMIC CHIP 0.033MF 10% 25V
C111	1-124-925-11	ELECT 2.2MF 20% 50V
C111	1-131-367-00	(BD)...TANTALUM 22MF 20% 16V
C112	1-161-379-00	CERAMIC 0.01MF 30% 16V
C112	1-164-232-11	(BD)...CERAMIC CHIP 0.01MF 10% 50V
C113	1-161-379-00	(WG,IT)...CERAMIC 0.01MF 30% 16V
C113	1-164-232-11	(BD)...CERAMIC CHIP 0.01MF 10% 50V
C114	1-161-379-00	CERAMIC 0.01MF 30% 16V
C114	1-164-161-11	(BD)...CERAMIC CHIP 0.0022MF 10% 50V
C115	1-164-159-11	CERAMIC 0.1MF 50V
C115	1-164-161-11	(BD)...CERAMIC CHIP 0.0022MF 10% 50V
C116	1-161-379-00	CERAMIC 0.01MF 30% 16V
C116	1-164-161-11	(BD)...CERAMIC CHIP 0.0022MF 10% 50V
C117	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C118	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C119	1-164-161-11	(BD)...CERAMIC CHIP 0.0022MF 10% 50V
C120	1-163-989-11	(BD)...CERAMIC CHIP 0.033MF 10% 25V
C151	1-163-019-00	(BD)...CERAMIC CHIP 0.0068MF 10% 50V
C152	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C153	1-163-006-11	(BD)...CERAMIC CHIP 560PF 10% 50V
C154	1-164-161-11	(BD)...CERAMIC CHIP 0.0022MF 10% 50V
C155	1-163-023-00	(BD)...CERAMIC CHIP 0.015MF 10% 50V
C171	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C172	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C173	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C174	1-163-038-00	(BD)...CERAMIC CHIP 0.1MF 25V
C201	1-164-159-11	CERAMIC 0.1MF 50V
C203	1-164-159-11	CERAMIC 0.1MF 50V
C211	1-136-161-00	FILM 0.047MF 5% 50V
C212	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C213	1-161-379-00	CERAMIC 0.01MF 30% 16V
C214	1-124-902-00	ELECT 0.47MF 20% 50V
C215	1-164-159-11	CERAMIC 0.1MF 50V
C221	1-162-207-31	CERAMIC 22PF 5% 50V
C222	1-162-207-31	CERAMIC 22PF 5% 50V
C223	1-124-443-00	ELECT 100MF 20% 10V
C225	1-136-165-00	FILM 0.1MF 5% 50V
C229	1-123-875-11	ELECT 10MF 20% 50V
C231	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C232	1-161-374-11	CERAMIC 0.0015MF 30% 16V
C233	1-162-286-31	CERAMIC 220PF 10% 50V
C234	1-162-286-31	CERAMIC 220PF 10% 50V
C235	1-124-791-11	ELECT 1MF 20% 50V

Ref.No.	Part No.	Description			
C236	1-124-791-11	ELECT	1MF	20%	50V
C237	1-123-875-11	ELECT	10MF	20%	50V
C238	1-123-875-11	ELECT	10MF	20%	50V
C249	1-126-176-11	ELECT	220MF	20%	10V
C401	1-162-282-31	CERAMIC	100PF	10%	50V
C402	1-162-282-31	CERAMIC	100PF	10%	50V
C403	1-162-290-31	CERAMIC	470PF	10%	50V
C410	1-126-157-11	ELECT	10MF	20%	16V
C416	1-124-463-00	ELECT	0.1MF	20%	50V
C417	1-126-157-11	ELECT	10MF	20%	16V
C418	1-126-157-11	ELECT	10MF	20%	16V
C419	1-126-157-11	ELECT	10MF	20%	16V
C420	1-126-157-11	ELECT	10MF	20%	16V
C421	1-126-157-11	ELECT	10MF	20%	16V
C422	1-126-157-11	ELECT	10MF	20%	16V
C423	1-164-159-11	CERAMIC	0.1MF		50V
C451	1-162-282-31	CERAMIC	100PF	10%	50V
C452	1-162-282-31	CERAMIC	100PF	10%	50V
C453	1-162-290-31	CERAMIC	470PF	10%	50V
C460	1-126-157-11	ELECT	10MF	20%	16V
C471	1-162-294-31	CERAMIC	0.001MF	10%	50V
C472	1-162-294-31	CERAMIC	0.001MF	10%	50V
C473	1-162-294-31	CERAMIC	0.001MF	10%	50V
C474	1-162-215-31	CERAMIC	47PF	5%	50V
C475	1-164-159-11	CERAMIC	0.1MF		50V
C491	1-164-159-11	CERAMIC	0.1MF		50V
C492	1-164-159-11	CERAMIC	0.1MF		50V
C493	1-164-159-11	CERAMIC	0.1MF		50V
C494	1-164-159-11	CERAMIC	0.1MF		50V
C502	1-162-294-31	CERAMIC	0.001MF	10%	50V
C504	1-162-289-31	CERAMIC	390PF	10%	50V
C505	1-161-329-00	CERAMIC	0.0068MF	30%	16V
C506	1-162-294-31	CERAMIC	0.001MF	10%	50V
C507	1-161-494-00	CERAMIC	0.022MF		25V
C508	1-161-327-00	CERAMIC	0.0033MF	30%	16V
C509	1-164-159-11	CERAMIC	0.1MF		50V
C510	1-162-306-11	CERAMIC	0.01MF	20%	16V
C511	1-124-464-11	ELECT	0.22MF	20%	50V
C512	1-161-494-00	CERAMIC	0.022MF		25V
C513	1-126-160-11	ELECT	1MF	20%	50V
C514	1-136-163-00	FILM	0.068MF	5%	50V
C515	1-136-163-00	FILM	0.068MF	5%	50V
C521	1-162-286-31	CERAMIC	220PF	10%	50V
C522	1-162-286-31	CERAMIC	220PF	10%	50V
C523	1-162-286-31	CERAMIC	220PF	10%	50V
C524	1-162-286-31	CERAMIC	220PF	10%	50V
C525	1-162-286-31	CERAMIC	220PF	10%	50V
C528	1-123-875-11	ELECT	10MF	20%	50V
C529	1-125-447-11	CAP,DOUBLE LAYERS	1.0F		5.5V
C539	1-162-282-31	CERAMIC	100PF	10%	50V
C540	1-162-282-31	CERAMIC	100PF	10%	50V
C541	1-162-282-31	CERAMIC	100PF	10%	50V
C542	1-162-294-31	CERAMIC	0.001MF	10%	50V
C543	1-162-294-31	CERAMIC	0.001MF	10%	50V
C544	1-162-294-31	CERAMIC	0.001MF	10%	50V
C545	1-162-294-31	CERAMIC	0.001MF	10%	50V
C546	1-162-294-31	CERAMIC	0.001MF	10%	50V
C547	1-162-294-31	CERAMIC	0.001MF	10%	50V

Ref.No.	Part No.	Description			
C548	1-164-159-11	CERAMIC	0.1MF		50V
C549	1-164-159-11	CERAMIC	0.1MF		50V
C552	1-162-294-31	CERAMIC	0.001MF	10%	50V
C554	1-162-289-31	CERAMIC	390PF	10%	50V
C555	1-161-329-00	CERAMIC	0.0068MF	30%	16V
C556	1-162-294-31	CERAMIC	0.001MF	10%	50V
C557	1-161-494-00	CERAMIC	0.022MF		25V
C558	1-161-327-00	CERAMIC	0.0033MF	30%	16V
C559	1-164-159-11	CERAMIC	0.1MF		50V
C560	1-162-306-11	CERAMIC	0.01MF	20%	16V
C561	1-124-464-11	ELECT	0.22MF	20%	50V
C562	1-161-494-00	CERAMIC	0.022MF		25V
C563	1-126-160-11	ELECT	1MF	20%	50V
C564	1-136-163-00	FILM	0.068MF	5%	50V
C565	1-136-163-00	FILM	0.068MF	5%	50V
C566	1-162-306-11	CERAMIC	0.01MF	20%	16V
C569	1-164-159-11	CERAMIC	0.1MF		50V
C570	1-164-159-11	CERAMIC	0.1MF		50V
C571	1-126-157-11	ELECT	10MF	20%	16V
C572	1-126-157-11	ELECT	10MF	20%	16V
C573	1-126-094-11	ELECT	4.7MF	20%	35V
C574	1-126-157-11	ELECT	10MF	20%	16V
C575	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C576	1-126-153-11	ELECT	22MF	20%	6.3V
C577	1-126-153-11	ELECT	22MF	20%	6.3V
C578	1-124-257-00	ELECT	2.2MF	20%	50V
C579	1-124-257-00	ELECT	2.2MF	20%	50V
C580	1-124-465-00	ELECT	0.47MF	20%	50V
C581	1-164-159-11	CERAMIC	0.1MF		50V
C582	1-164-159-11	CERAMIC	0.1MF		50V
C583	1-161-494-00	CERAMIC	0.022MF		25V
C584	1-161-494-00	CERAMIC	0.022MF		25V
C585	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C586	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C587	1-124-257-00	ELECT	2.2MF	20%	50V
C588	1-124-257-00	ELECT	2.2MF	20%	50V
C589	1-124-257-00	ELECT	2.2MF	20%	50V
C590	1-124-257-00	ELECT	2.2MF	20%	50V
C591	1-124-257-00	ELECT	2.2MF	20%	50V
C592	1-162-199-31	CERAMIC	10PF	5%	50V
C593	1-162-199-31	CERAMIC	10PF	5%	50V
C594	1-102-959-00	CERAMIC	22PF	5%	50V
C595	1-102-959-00	CERAMIC	22PF	5%	50V
C596	1-125-486-11	ELECT	0.22F		5.5V
C597	1-126-094-11	ELECT	4.7MF	20%	35V
C601	1-136-161-00	FILM	0.047MF	5%	50V
C602	1-124-925-11	ELECT	2.2MF	20%	50V
C603	1-124-925-11	ELECT	2.2MF	20%	50V
C604	1-162-294-31	CERAMIC	0.001MF	10%	50V
C611	1-162-217-31	CERAMIC	56PF	5%	50V
C612	1-136-157-00	FILM	0.022MF	5%	50V
C613	1-124-925-11	ELECT	2.2MF	20%	50V
C614	1-124-925-11	ELECT	2.2MF	20%	50V
C615	1-124-443-00	ELECT	100MF	20%	10V
C622	1-164-159-11	CERAMIC	0.1MF		50V
C651	1-136-161-00	FILM	0.047MF	5%	50V
C652	1-124-925-11	ELECT	2.2MF	20%	50V
C653	1-124-925-11	ELECT	2.2MF	20%	50V

Ref.No.	Part No.	Description			
C654	1-162-294-31	CERAMIC	0.001MF	10%	50V
C656	1-161-379-00	CERAMIC	0.01MF	30%	16V
C662	1-126-153-11	ELECT	22MF	20%	6.3V
C663	1-124-925-11	ELECT	2.2MF	20%	50V
C671	1-164-159-11	CERAMIC	0.1MF		50V
C672	1-136-745-11	FILM	0.47MF	5%	50V
C673	1-161-379-00	CERAMIC	0.01MF	30%	16V
C674	1-164-159-11	CERAMIC	0.1MF		50V
C675	1-164-159-11	CERAMIC	0.1MF		50V
C677	1-164-159-11	CERAMIC	0.1MF		50V
C701	1-162-290-31	CERAMIC	470PF	10%	50V
C702	1-162-290-31	CERAMIC	470PF	10%	50V
C703	1-124-254-00	ELECT	0.68MF	20%	50V
C704	1-123-875-11	ELECT	10MF	20%	50V
C705	1-123-875-11	ELECT	10MF	20%	50V
C706	1-124-902-00	ELECT	0.47MF	20%	50V
C731	1-162-282-31	CERAMIC	100PF	10%	50V
C732	1-162-282-31	CERAMIC	100PF	10%	50V
C733	1-130-474-00	(AEP,UK,WG,IT) ...MYLAR	0.0018MF	5%	50V
C734	1-130-480-00	(AEP,UK,WG,IT) ...MYLAR	0.0056MF	5%	50V
C735	1-123-875-11	(AEP,UK,WG,IT) ...ELECT	10MF	20%	50V
C736	1-124-791-11	(AEP,UK,WG,IT) ...ELECT	1MF	20%	50V
C743	1-164-159-11	CERAMIC	0.1MF		50V
C751	1-162-290-31	CERAMIC	470PF	10%	50V
C752	1-162-290-31	CERAMIC	470PF	10%	50V
C753	1-124-254-00	ELECT	0.68MF	20%	50V
C754	1-123-875-11	ELECT	10MF	20%	50V
C755	1-123-875-11	ELECT	10MF	20%	50V
C756	1-124-902-00	ELECT	0.47MF	20%	50V
C781	1-162-282-31	CERAMIC	100PF	10%	50V
C782	1-162-282-31	CERAMIC	100PF	10%	50V
C783	1-130-474-00	(AEP,UK,WG,IT) ...MYLAR	0.0018MF	5%	50V
C784	1-130-480-00	(AEP,UK,WG,IT) ...MYLAR	0.0056MF	5%	50V
C785	1-123-875-11	(AEP,UK,WG,IT) ...ELECT	10MF	20%	50V
C786	1-124-791-11	(AEP,UK,WG,IT) ...ELECT	1MF	20%	50V
C791	1-123-875-11	ELECT	10MF	20%	50V
C792	1-161-379-00	CERAMIC	0.01MF	30%	16V
C793	1-123-875-11	ELECT	10MF	20%	50V
C794	1-161-379-00	CERAMIC	0.01MF	30%	16V
C797	1-161-379-00	CERAMIC	0.01MF	30%	16V
C798A	1-161-379-00	CERAMIC	0.01MF	30%	16V
C798B	1-130-475-00	(AEP,UK,WG,IT) ...MYLAR	0.0022MF	5%	50V
C799	1-130-471-00	(AEP,UK,WG,IT) ...MYLAR	0.001MF	5%	50V
C801	1-123-875-11	ELECT	10MF	20%	50V
C802	1-162-290-31	CERAMIC	470PF	10%	50V
C803	1-126-233-11	ELECT	22MF	20%	50V
C804	1-164-159-11	CERAMIC	0.1MF		50V

Ref.No.	Part No.	Description			
C805	1-164-159-11	CERAMIC	0.1MF		50V
C851	1-123-875-11	ELECT	10MF	20%	50V
C852	1-162-290-31	CERAMIC	470PF	10%	50V
C853	1-126-233-11	ELECT	22MF	20%	50V
C854	1-164-159-11	CERAMIC	0.1MF		50V
C855	1-164-159-11	CERAMIC	0.1MF		50V
C871	⚠1-124-618-11	ELECT	2200MF	20%	35V
C872	⚠1-124-618-11	ELECT	2200MF	20%	35V
C873	1-124-120-11	ELECT	220MF	20%	16V
C874	⚠1-124-484-11	ELECT	220MF	20%	35V
C875	⚠1-123-875-11	ELECT	10MF	20%	50V
C876	1-123-875-11	ELECT	10MF	20%	50V
C877	⚠1-123-875-11	ELECT	10MF	20%	50V
C878	⚠1-124-910-11	ELECT	47MF	20%	50V
C879	⚠1-124-910-11	ELECT	47MF	20%	50V
C880	1-124-910-11	ELECT	47MF	20%	50V
C901	1-164-159-11	CERAMIC	0.1MF		50V
C902	1-164-159-11	CERAMIC	0.1MF		50V
C903	1-126-160-11	ELECT	1MF	20%	50V
C905	⚠1-124-122-11	ELECT	100MF	20%	50V
C906	⚠1-124-556-11	ELECT	2200MF	20%	16V
C907	1-124-572-11	ELECT	100MF	20%	63V
C909	1-126-094-11	ELECT	4.7MF	20%	35V
C911	1-126-094-11	ELECT	4.7MF	20%	35V
C912	1-126-157-11	ELECT	10MF	20%	16V
C913	⚠1-126-094-11	ELECT	4.7MF	20%	35V
C915	1-126-094-11	ELECT	4.7MF	20%	35V
C916	1-126-094-11	ELECT	4.7MF	20%	35V
C917	1-126-094-11	ELECT	4.7MF	20%	35V
C920	1-164-159-11	CERAMIC	0.1MF		50V
C921	1-164-159-11	CERAMIC	0.1MF		50V
C922	⚠1-126-094-11	ELECT	4.7MF	20%	35V
C996	1-126-094-11	ELECT	4.7MF	20%	35V
C997	1-124-791-11	ELECT	1MF	20%	50V
C998	1-126-154-11	ELECT	47MF	20%	6.3V
C999	1-123-875-11	ELECT	10MF	20%	50V
CB801	⚠1-532-564-00	BREAKER, CIRCUIT (2.2A)			
CB851	⚠1-532-564-00	BREAKER, CIRCUIT (2.2A)			
CF1	1-567-389-11	FILTER, CERAMIC 10.7MHz			
CF2	1-567-389-11	(WG,IT)...FILTER, CERAMIC 10.7MHz			
CF81	1-567-389-11	FILTER, CERAMIC 10.7MHz			
CN101	1-568-796-11	(BD)...SOCKET, CONNECTOR 22P			
CN102	1-568-795-11	(BD)...SOCKET, CONNECTOR 12P			
CN201	*1-569-155-11	PLUG, CONNECTOR 10P			
CN202	1-568-802-11	SOCKET, CONNECTOR 19P			
CN203	*1-569-156-11	SOCKET, CONNECTOR 10P			
CN253	*1-564-339-71	PIN, CONNECTOR 5P			
CN291	*1-564-498-11	PIN, CONNECTOR 5P			
CN301	1-569-225-11	SOCKET, CONNECTOR 14P			
CN401A	*1-568-851-11	SOCKET, CONNECTOR 8P			
CN401B	*1-569-418-11	PIN, CONNECTOR 13P			
CN402	*1-568-856-11	SOCKET, CONNECTOR 13P			
CN403	*1-568-827-11	SOCKET, CONNECTOR 8P			
CN404	*1-564-720-11	PIN, CONNECTOR 4P			
CN501	*1-569-156-11	SOCKET, CONNECTOR 10P			
CN502	*1-569-156-11	SOCKET, CONNECTOR 10P			
CN503	*1-509-931-11	SOCKET, CONNECTOR 13P			

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
CN504	1-564-336-11	PIN, CONNECTOR 2P
CN601	1-569-511-11	SOCKET, CONNECTOR 14P
CN701	*1-569-155-11	PLUG, CONNECTOR 10P
CN702	*1-569-155-11	PLUG, CONNECTOR 10P
CN703	*1-568-832-11	SOCKET, CONNECTOR 13P
CN704	*1-568-834-11	SOCKET, CONNECTOR 15P
CN705A	1-564-336-00	PIN, CONNECTOR 2P
CN705B	1-564-704-11	(AEP,UK,WG,IT)...PIN, CONNECTOR 2P
CN801	*1-508-694-00	PIN, CONNECTOR 8P
CN802	*1-564-706-11	PIN, CONNECTOR 4P
CN901⚠	.1-526-931-11	(AEP,UK,WG,IT)...INLET, AC (~AC IN)
CN901⚠	.1-526-930-11	(US,Canadian,E,EA,AUS)...INLIT, AC (~AC IN)
CN902	*1-568-858-11	SOCKET, CONNECTOR 15P
CN903	*1-565-484-11	CONNECTOR, BOARD TO BOARD 8P
CNP11A	1-564-501-11	PIN, CONNECTOR 8P
CNP11B	1-506-615-11	PIN, CONNECTOR 9P
CNP12A	*1-564-337-00	PIN, CONNECTOR 3P
CNP12B	*1-564-337-61	PIN, CONNECTOR 3P
CNP13A	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP13B	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP81A	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P
CNP81B	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CNP82A	*1-564-339-00	PIN, CONNECTOR 5P
CNP82B	*1-564-339-61	PIN, CONNECTOR 5P
CNP83B	*1-564-338-61	PIN, CONNECTOR 4P
CNP84B	*1-564-704-11	(AEP,UK,WG,IT)...PIN, CONNECTOR (SMALL TYPE) 2P
CP201	1-233-217-11	COMPOSITION CIRCUIT BLOCK (100PX5)
CP502	1-233-207-11	COMPOSITION CIRCUIT BLOCK (220PX13)
CP503	1-233-207-11	COMPOSITION CIRCUIT BLOCK (220PX13)
CP504	1-233-207-11	COMPOSITION CIRCUIT BLOCK (220PX13)
CT21	1-141-227-00	(E,EA,AUS)...CAP, TRIMMER
CT22	1-141-227-00	(E,EA,AUS)...CAP, TRIMMER
D11A	8-719-107-94	DIODE 1SS202-1
D11B	8-719-107-94	DIODE 1SS202-1
D21	8-719-923-64	DIODE (E,EA,AUS)...DIODE KV1236-D
D81	8-719-912-20	DIODE 1SS120
D81B	8-719-107-94	DIODE 1SS202-1
D201	8-719-010-34	ZENER DIODE UZ-4.7BSC
D205	8-719-912-20	DIODE 1SS120
D206	8-719-984-16	LED GL-1HY112-CD
D207	8-719-984-17	LED GL-1EG112-CD
D301	8-719-984-17	LED GL-1EG112-CD
D302	8-719-984-17	LED GL-1EG112-CD
D303	8-719-984-17	LED GL-1EG112-CD
D304	8-719-984-17	LED GL-1EG112-CD
D305	8-719-984-17	LED GL-1EG112-CD
D306	8-719-984-15	LED GL-1HD112-DE
D307	8-719-984-15	LED GL-1HD112-DE
D308	8-719-984-15	LED GL-1HD112-DE
D309	8-719-984-16	LED GL-1HY112-CD
D406	8-719-912-20	DIODE 1SS120
D522	8-719-312-81	LED SEL4914R-LC05
D523	8-719-312-81	LED SEL4914R-LC05
D571	8-719-312-80	LED SEL4214R-LC05
D574	8-719-912-20	DIODE 1SS120
D576	8-719-912-20	DIODE 1SS120
D577	8-719-912-20	DIODE 1SS120
D578	8-719-912-20	DIODE 1SS120
D579	8-719-912-20	DIODE 1SS120
D580	8-719-912-20	DIODE 1SS120
D581	8-719-912-20	DIODE 1SS120
D582	8-719-912-20	DIODE 1SS120
D583	8-719-912-20	DIODE 1SS120
D585	8-719-912-20	(US,Canadian,E,EA,AUS)...DIODE 1SS120
D588	8-719-912-20	(EXCEPT FOR US,Canadian,IT) ...DIODE 1SS120
D589	8-719-912-20	(IT)....DIODE 1SS120
D590	8-719-912-20	(E,EA,AUS)...DIODE 1SS120
D591	8-719-912-20	DIODE 1SS120
D592	8-719-912-20	DIODE 1SS120
D593	8-719-912-20	DIODE 1SS120
D594	8-719-912-20	DIODE 1SS120
D595	8-719-912-20	DIODE 1SS120
D598	8-719-001-21	ZENER DIODE UZL-9H1
D601	8-719-912-20	DIODE 1SS120
D602	8-719-200-82	DIODE 11ES2
D603	8-719-200-82	DIODE 11ES2
D604	8-719-912-20	DIODE 1SS120
D605	8-719-200-82	DIODE 11ES2
D606	8-719-010-15	ZENER DIODE UZ-3.0BS
D701	8-719-000-90	ZENER DIODE UZL-7M3
D702	8-719-000-90	ZENER DIODE UZL-7M3
D703	8-719-933-36	ZENER DIODE HZS6B1L
D741	8-719-912-20	DIODE 1SS120
D742	8-719-912-20	DIODE 1SS120
D743	8-719-912-20	DIODE 1SS120
D744	8-719-912-20	DIODE 1SS120
D745	8-719-912-20	DIODE 1SS120
D746	8-719-912-20	DIODE 1SS120
D801	8-719-912-20	DIODE 1SS120
D901	⚠ 8-719-912-20	DIODE 1SS120
D902	⚠ 8-719-912-20	DIODE 1SS120
D903	⚠ 8-719-200-82	DIODE 11ES2
D904	⚠ 8-719-200-82	DIODE 11ES2
D907	8-719-200-82	DIODE 11ES2
D908	8-719-200-82	DIODE 11ES2
D909	8-719-312-09	DIODE RBA-402
D910	8-719-002-33	ZENER DIODE UZL-24L
D911	8-719-014-64	ZENER DIODE UZP-5.1BC
D912	8-719-933-36	ZENER DIODE HZS6B1L
DR11A	*1-564-342-11	PIN, CONNECTOR 8P
DR11B	*1-506-503-61	PIN, CONNECTOR 9P
DR12A	*1-564-337-00	PIN, CONNECTOR 3P
DR12B	*1-564-337-61	PIN, CONNECTOR 3P
DR82A	1-564-339-00	PIN, CONNECTOR 5P
DR82B	*1-564-339-61	PIN, CONNECTOR 5P
DR83B	*1-564-338-61	PIN, CONNECTOR 4P

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
F901	⚠.1-532-215-00	(E,EA,AUS)...FUSE, TIME-LAG (0.8A)
F901	⚠.1-532-555-11	(US,Canadian)...FUSE, GLASS TUBE(1.6A)
F902	⚠.1-532-259-11	(EXCEPT FOR US,Canadian) ...FUSE, GLASS TUBE(1.6A)
F999	⚠.1-532-783-21	(US,Canadian)...FUSE, MICRO (5A)
FE1	1-465-007-11	(WG,IT)...FRONT END (FM)(4 GANG)
FE1	1-465-283-11	(EXCEPT FOR WG,IT)...FRONT END(2 GANG)
FE2	1-236-461-11	(US,Canadian)...ENCAPSULATED COMPONENT
FE2	1-236-462-11	(AEP,UK,WG,IT)..ENCAPSULATED COMPONENT
FE2	1-236-777-11	(E,EA,AUS)......ENCAPSULATED COMPONENT
FE3	1-236-463-11	(AEP,UK,WG,IT)..ENCAPSULATED COMPONENT
FL81	1-236-465-11	(WG,IT)...ENCAPSULATED COMPONENT
FLT501	1-519-577-11	INDICATOR TUBE, FLUORESCENT
FLT502	1-519-578-11	INDICATOR TUBE, FLUORESCENT
HE1	A-2003-504-A	(DECK B)...CHASSIS ASSY, HEAD (PB/REC/ERASE)
HP1	A-2003-503-A	(DECK A)...PC BOARD ASSY, HEAD (PB)
HRP1	A-2003-504-A	(DECK B)...CHASSIS ASSY, HEAD (PB/REC/ERASE)
IC51	8-759-239-29	IC TC9217P
IC81	8-759-821-45	IC LA1851N
IC81A	8-759-111-44	IC UPC4570C-1
IC81B	8-759-111-44	IC UPC4570C-1
IC101	8-752-037-33	(BD)...IC CXA1372Q
IC102	8-759-821-94	(BD)...IC LA6532M
IC201	8-759-150-19	IC UPD75112CW-064
IC202	8-752-333-31	IC CXD2500Q
IC221	8-752-334-06	IC CXD2551P
IC222	8-759-990-13	IC TDA1543A-S1
IC223	8-759-634-51	IC M5218AP
IC253	8-759-633-65	IC M54641L
IC401	8-759-634-50	IC M5218AL
IC406	8-759-820-62	IC LB1639
IC451	8-759-634-50	IC M5218AL
IC501	8-759-630-99	IC M5226FP
IC502	8-759-634-50	IC M5218AL
IC503	8-759-634-50	IC M5218AL
IC504	8-759-820-07	IC LC7566
IC505	8-759-148-52	IC UPD75212ACW-189
IC506	8-749-920-59	IC A1QH3020S
IC551	8-759-630-99	IC M5226FP
IC601	8-759-040-53	IC MC14053BCP
IC602	8-752-036-57	IC CXA1298AP
IC603	8-759-634-50	IC M5218AL
IC604	8-759-632-54	IC M50964-212SP
IC701	8-752-034-26	IC CXA1101P
IC702	8-759-634-50	IC M5218AL
IC703	8-759-000-49	IC MC14066BCP
IC704	8-759-634-50	(AEP,UK,WG,IT)...IC M5218AL
IC705	8-759-208-08	IC TC4052BPHB
IC706	8-759-605-16	IC M51953BL
IC801	⚠8-749-900-95	IC STK-4122MK2
IC901	8-759-602-66	IC M5230L-A
IC999	8-759-821-93	IC LA5601
⚠ICP999.	1-532-783-21	(E,EA,AUS).......FUSE, MICRO (5A)
⚠ICP999.	1-532-846-21	(AEP,UK,WG,IT)...FUSE, MICRO (5A)

Ref.No.	Part No.	Description
IFT81	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)
IFT82	1-404-807-11	TRANSFORMER, DISCRIMINATOR
J101	1-216-295-00	(BD)...METAL GLAZE 0 5% 1/10W
J102	1-216-295-00	(BD)...METAL GLAZE 0 5% 1/10W
J401	1-562-837-21	JACK (MIX MIC)
J451	1-562-837-21	JACK (HEADPHONES)
J701	1-569-181-11	JACK, PIN 2P (AUX/PHONO)
L1	1-408-425-00	(AEP,UK,WG,IT)...INDUCTOR 220UH
L41B	1-410-780-11	INDUCTOR 27MMH
L61B	1-410-780-11	INDUCTOR 27MMH
L81	1-410-496-11	INDUCTOR 1.5MMH
L83	1-410-489-11	INDUCTOR 390UH
LPF81	1-235-164-00	FILTER, LOW PASS
LPF82	1-235-164-00	FILTER, LOW PASS
M1	X-3343-447-1	(DECK A)...MOTOR ASSY
M2	X-3343-447-1	(DECK B)...MOTOR ASSY
M101	X-4917-504-1	MOTOR ASSY (SLED)
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)
M251	A-4608-362-A	MOTOR (L) ASSY (LOADING)
PM1	1-454-456-11	(DECK A)...SOLENOID, PLUNGER
PM2	1-454-456-11	(DECK B)...SOLENOID, PLUNGER
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD
Q2	8-729-620-19	(WG,IT)...TRANSISTOR 2SC2724-CD
Q3	8-729-900-80	TRANSISTOR DTC114ES
Q4	8-729-900-61	TRANSISTOR DTA114ES
Q5	8-729-900-80	(EXCEPT FOR US,Canadian) ...TRANSISTOR DTC114ES
Q6	8-729-900-80	(EXCEPT FOR US,Canadian) ...TRANSISTOR DTC114ES
Q7	8-729-119-76	(EXCEPT FOR US,Canadian) ...TRANSISTOR 2SA1175-HFE
Q8	8-729-620-05	(EXCEPT FOR US,Canadian) ...TRANSISTOR 2SC2603-EF
Q9	8-729-900-80	(EXCEPT FOR US,Canadian) ...TRANSISTOR DTC114ES
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12A	8-719-939-23	PHOTO SENSOR GP-2S09-C
Q12B	8-719-939-23	PHOTO SENCOR GP-2S09-C
Q51	8-729-202-67	TRANSISTOR 2SK246-GR3
Q52	8-729-201-84	TRANSISTOR 2SC3112-B
Q53	8-729-202-67	(AEP,UK,WG,IT)...TRANSISTOR 2SK246-GR3
Q54	8-729-201-84	(AEP,UK,WG,IT)...TRANSISTOR 2SC3112-B
Q81B	8-729-111-29	TRANSISTOR 2SD1616A-K
Q82B	8-729-142-46	TRANSISTOR 2SC2001-LK
Q83B	8-729-142-46	TRANSISTOR 2SC2001-LK
Q101	8-729-620-05	TRANSISTOR 2SC2603-EF
Q101	8-729-901-01	(BD)...TRANSISTOR DTC144EK
Q102	8-729-620-05	TRANSISTOR 2SC2603-EF
Q103	8-729-900-80	TRANSISTOR DTC114ES
Q104	8-729-900-80	TRANSISTOR DTC114ES
Q201	8-729-620-05	TRANSISTOR 2SC2603-EF
Q231	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q232	8-729-141-26	TRANSISTOR 2SC3622A-LK
Q233	8-729-900-65	TRANSISTOR DTA144ES
Q234	8-729-900-80	TRANSISTOR DTC114ES
Q252	8-729-900-80	TRANSISTOR DTC114ES

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
Q253	8-729-900-80	TRANSISTOR DTC114ES
Q351	8-729-900-61	TRANSISTOR DTA114ES
Q352	8-729-900-61	TRANSISTOR DTA114ES
Q353	8-729-900-61	TRANSISTOR DTA114ES
Q354	8-729-900-61	TRANSISTOR DTA114ES
Q406	8-729-904-39	TRANSISTOR DTC114TS
Q407	8-729-904-39	TRANSISTOR DTC114TS
Q456	8-729-904-39	TRANSISTOR DTC114TS
Q457	8-729-904-39	TRANSISTOR DTC114TS
Q501	8-729-904-39	TRANSISTOR DTC114TS
Q551	8-729-904-39	TRANSISTOR DTC114TS
Q571	8-729-900-61	TRANSISTOR DTA114ES
Q572	8-729-900-61	TRANSISTOR DTA114ES
Q573	8-729-224-61	TRANSISTOR 2SK246-Y
Q574	8-729-900-61	TRANSISTOR DTA114ES
Q575	8-729-900-80	TRANSISTOR DTC114ES
Q576	8-729-620-05	TRANSISTOR 2SC2603-EF
Q601	8-729-900-61	TRANSISTOR DTA114ES
Q602	8-729-900-61	TRANSISTOR DTA114ES
Q603	8-729-900-61	TRANSISTOR DTA114ES
Q604	8-729-900-61	TRANSISTOR DTA114ES
Q605	8-729-900-61	TRANSISTOR DTA114ES
Q606	8-729-900-61	TRANSISTOR DTA114ES
Q607	8-729-900-61	TRANSISTOR DTA114ES
Q608	8-729-801-84	TRANSISTOR 2SB1013-4
Q609	8-729-801-84	TRANSISTOR 2SB1013-4
Q610	8-729-801-48	TRANSISTOR 2SB1013-4
Q611	8-729-801-48	TRANSISTOR 2SB1013-4
Q612	8-729-801-48	TRANSISTOR 2SB1013-4
Q613	8-729-900-80	TRANSISTOR DTC114ES
Q614	8-729-900-80	TRANSISTOR DTC114ES
Q615	8-729-904-39	TRANSISTOR DTC114TS
Q616	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q617	8-729-900-80	TRANSISTOR DTC114ES
Q701	8-729-904-39	TRANSISTOR DTC114TS
Q741	8-729-900-89	TRANSISTOR DTC144ES
Q742	8-729-900-89	TRANSISTOR DTC144ES
Q751	8-729-904-39	TRANSISTOR DTC114TS
Q781	8-729-900-61	TRANSISTOR DTA114ES
Q782	8-729-900-61	TRANSISTOR DTA114ES
Q791	8-729-111-29	TRANSISTOR 2SD1616A-K
Q792	8-729-920-98	TRANSISTOR 2SD1761-EF
Q794	8-729-900-65	TRANSISTOR DTA144ES
Q795	8-729-900-89	TRANSISTOR DTC144ES
Q801	8-729-900-89	TRANSISTOR DTC144ES
Q901	8-729-620-05	TRANSISTOR 2SC2603-EF
Q903	8-729-920-97	TRANSISTOR 2SB1187-EF
Q904	8-729-920-97	TRANSISTOR 2SB1187-EF
Q905	8-729-920-98	TRANSISTOR 2SD1761-EF
Q906	8-729-920-98	TRANSISTOR 2SD1761-EF
Q907	8-729-900-80	TRANSISTOR DTC114ES
Q908	8-729-900-80	TRANSISTOR DTC114ES
Q999	8-729-900-80	TRANSISTOR DTC114ES
R1	1-249-411-11	CARBON 330 5% 1/4W
R2	1-249-411-11	CARBON 330 5% 1/4W
R3	1-247-891-00	CARBON 330K 5% 1/4W

Ref.No.	Part No.	Description
R4	1-249-411-11	CARBON 330 5% 1/4W
R5	1-247-891-00	(WG,IT)...CARBON 330K 5% 1/4W
R6	1-249-411-11	(WG,IT)...CARBON 330 5% 1/4W
R7	1-249-405-11	CARBON 100 5% 1/4W
R8	1-249-441-11	CARBON 100K 5% 1/4W
R9	1-249-437-11	CARBON 47K 5% 1/4W
R10	1-249-421-11	(E,EA,AUS)...CARBON 2.2K 5% 1/4W
R10	1-249-437-11	(AEP,UK,WG,IT) ...CARBON 47K 5% 1/4W
R11B	1-247-834-11	CARBON 1.3K 5% 1/4W
R11	1-249-421-11	(AEP,UK,WG,IT) ...CARBON 2.2K 5% 1/4W
R11	1-249-429-11	(E,EA,AUS)...CARBON 10K 5% 1/4W
R12B	1-249-414-11	CARBON 560 5% 1/4W
R12	1-249-421-11	(AEP,UK,WG,IT) ...CARBON 2.2K 5% 1/4W
R12	1-249-429-11	(E,EA,AUS)...CARBON 10K 5% 1/4W
R13B	1-247-818-11	CARBON 300 5% 1/4W
R13	1-249-433-11	(AEP,UK,WG,IT) ...CARBON 22K 5% 1/4W
R14A	1-249-408-11	CARBON 180 5% 1/4W
R14B	1-249-408-11	CARBON 180 5% 1/4W
R14	1-249-437-11	(AEP,UK,WG,IT) ...CARBON 47K 5% 1/4W
R15	1-247-903-00	(AEP,UK,WG,IT) ...CARBON 1M 5% 1/4W
R17A	1-249-437-11	CARBON 47K 5% 1/4W
R17B	1-249-437-11	CARBON 47K 5% 1/4W
R18A	1-249-437-11	CARBON 47K 5% 1/4W
R18B	1-249-437-11	CARBON 47K 5% 1/4W
R20	1-249-425-11	(EXCEPT FOR US,Canadian) ...CARBON 4.7K 5% 1/4W
R21	1-249-429-11	(E,EA,AUS)...CARBON 10K 5% 1/4W
R22	1-249-429-11	(E,EA,AUS)...CARBON 10K 5% 1/4W
R41A	1-247-881-00	CARBON 120K 5% 1/4W
R41B	1-247-881-00	CARBON 120K 5% 1/4W
R42A	1-249-405-11	CARBON 100 5% 1/4W
R42B	1-249-405-11	CARBON 100 5% 1/4W
R43A	1-247-882-11	CARBON 130K 5% 1/4W
R43B	1-247-882-11	CARBON 130K 5% 1/4W
R44A	1-249-426-11	CARBON 5.6K 5% 1/4W
R44B	1-249-426-11	CARBON 5.6K 5% 1/4W
R45B	1-249-430-11	CARBON 12K 5% 1/4W
R51	1-249-417-11	CARBON 1K 5% 1/4W
R52	1-249-417-11	CARBON 1K 5% 1/4W
R54	1-249-417-11	CARBON 1K 5% 1/4W
R55	1-249-425-11	CARBON 4.7K 5% 1/4W
R56	1-249-405-11	CARBON 100 5% 1/4W
R57	1-249-401-11	CARBON 47 5% 1/4W
R58	1-249-423-11	CARBON 3.3K 5% 1/4W
R59	1-249-414-11	CARBON 560 5% 1/4W
R60	1-249-417-11	CARBON 1K 5% 1/4W
R61	1-249-410-11	CARBON 270 5% 1/4W
R61A	1-247-881-00	CARBON 120K 5% 1/4W
R61B	1-247-881-00	CARBON 120K 5% 1/4W

Ref.No.	Part No.	Description
R62	1-249-418-11	CARBON 1.2K 5% 1/4W
R62A	1-249-405-11	CARBON 100 5% 1/4W
R62B	1-249-405-11	CARBON 100 5% 1/4W
R63	1-249-421-11	CARBON 2.2K 5% 1/4W
R63A	1-247-882-11	CARBON 130K 5% 1/4W
R63B	1-247-882-11	CARBON 130K 5% 1/4W
R64	1-249-425-11	CARBON 4.7K 5% 1/4W
R64A	1-249-426-11	CARBON 5.6K 5% 1/4W
R64B	1-249-426-11	CARBON 5.6K 5% 1/4W
R65B	1-249-430-11	CARBON 12K 5% 1/4W
R65	1-249-425-11	CARBON 4.7K 5% 1/4W
R66	1-249-405-11	CARBON 100 5% 1/4W
R67	1-249-423-11	(AEP,UK,WG,IT) ...CARBON 3.3K 5% 1/4W
R68	1-249-414-11	(AEP,UK,WG,IT) ...CARBON 560 5% 1/4W
R69	1-249-417-11	(AEP,UK,WG,IT) ...CARBON 1K 5% 1/4W
R70	1-249-410-11	(AEP,UK,WG,IT) ...CARBON 270 5% 1/4W
R71	1-249-433-11	(AEP,UK,WG,IT) ...CARBON 22K 5% 1/4W
R72	1-249-421-11	(AEP,UK,WG,IT) ...CARBON 2.2K 5% 1/4W
R73	1-249-425-11	(AEP,UK,WG,IT) ...CARBON 4.7K 5% 1/4W
R74	1-249-425-11	(AEP,UK,WG,IT) ...CARBON 4.7K 5% 1/4W
R81	1-249-433-11	CARBON 22K 5% 1/4W
R81A	1-249-409-11	CARBON 220 5% 1/4W
R81B	1-249-409-11	CARBON 220 5% 1/4W
R82	1-249-417-11	CARBON 1K 5% 1/4W
R82A	1-249-409-11	CARBON 220 5% 1/4W
R82B	1-249-409-11	CARBON 220 5% 1/4W
R83	1-249-399-11	CARBON 33 5% 1/4W
R83B	1-249-429-11	CARBON 10K 5% 1/4W
R84	1-249-429-11	CARBON 10K 5% 1/4W
R84B ⚠	1-212-849-00	FUSIBLE 4.7 5% 1/4W F
R85	1-249-429-11	CARBON 10K 5% 1/4W
R85B	1-249-435-11	CARBON 33K 5% 1/4W
R86	1-249-437-11	CARBON 47K 5% 1/4W
R86B	1-249-435-11	CARBON 33K 5% 1/4W
R87	1-249-409-11	CARBON 220 5% 1/4W
R88	1-249-429-11	CARBON 10K 5% 1/4W
R89	1-249-429-11	CARBON 10K 5% 1/4W
R90	1-249-421-11	CARBON 2.2K 5% 1/4W
R91	1-249-421-11	CARBON 2.2K 5% 1/4W
R92	1-247-891-00	CARBON 330K 5% 1/4W
R93	1-247-891-00	CARBON 330K 5% 1/4W
R94	1-249-417-11	CARBON 1K 5% 1/4W
R95	1-249-417-11	CARBON 1K 5% 1/4W
R96	1-249-425-11	CARBON 4.7K 5% 1/4W
R97	1-249-425-11	CARBON 4.7K 5% 1/4W
R98	1-249-404-00	CARBON 82 5% 1/4W
R99	1-249-417-11	(EXCEPT FOR WG,IT) ...CARBON 1K 5% 1/4W
R99	1-249-420-11	(WG,IT)...CARBON 1.8K 5% 1/4W

Ref.No.	Part No.	Description
R100	1-247-848-11	CARBON 5.1K 5% 1/4W
R101	1-216-097-00	(BD)...METAL GLAZE 100K 5% 1/10W
R102	1-216-097-00	(BD)...METAL GLAZE 100K 5% 1/10W
R102	1-249-430-11	(EXCEPT FOR WG,IT) ...CARBON 12K 5% 1/4W
R103	1-216-091-00	(BD)...METAL GLAZE 56K 5% 1/10W
R103	1-249-428-11	CARBON 8.2K 5% 1/4W
R104	1-216-099-00	(BD)...METAL GLAZE 120K 5% 1/10W
R104	1-249-435-11	CARBON 33K 5% 1/4W
R105	1-216-069-00	(BD)...METAL GLAZE 6.8K 5% 1/10W
R105	1-249-431-11	CARBON 15K 5% 1/4W
R106	1-216-061-00	(BD)...METAL GLAZE 3.3K 5% 1/10W
R106	1-249-417-11	CARBON 1K 5% 1/4W
R107	1-216-114-00	(BD)...METAL GLAZE 510K 5% 1/10W
R107	1-249-430-11	(WG,IT)...CARBON 12K 5% 1/4W
R108	1-216-105-00	(BD)...METAL GLAZE 220K 5% 1/10W
R108	1-249-417-11	CARBON 1K 5% 1/4W
R109	1-216-061-00	(BD)...METAL GLAZE 3.3K 5% 1/10W
R110	1-216-049-00	(BD)...METAL GLAZE 1K 5% 1/10W
R111	1-216-049-00	(BD)...METAL GLAZE 1K 5% 1/10W
R112	1-216-083-00	(BD)...METAL GLAZE 27K 5% 1/10W
R113	1-216-071-00	(BD)...METAL GLAZE 8.2K 5% 1/10W
R114	1-216-105-00	(BD)...METAL GLAZE 220K 5% 1/10W
R152	1-216-073-00	(BD)...METAL GLAZE 10K 5% 1/10W
R153	1-216-085-00	(BD)...METAL GLAZE 33K 5% 1/10W
R154	1-216-085-00	(BD)...METAL GLAZE 33K 5% 1/10W
R155	1-216-093-00	(BD)...METAL GLAZE 68K 5% 1/10W
R156	1-216-081-00	(BD)...METAL GLAZE 22K 5% 1/10W
R157	1-216-079-00	(BD)...METAL GLAZE 18K 5% 1/10W
R158	1-216-079-00	(BD)...METAL GLAZE 18K 5% 1/10W
R159	1-216-079-00	(BD)...METAL GLAZE 18K 5% 1/10W
R160	1-216-049-00	(BD)...METAL GLAZE 1K 5% 1/10W
R171	1-216-001-00	(BD)...METAL GLAZE 10 5% 1/10W
R172	1-216-001-00	(BD)...METAL GLAZE 10 5% 1/10W
R173	1-216-001-00	(BD)...METAL GLAZE 10 5% 1/10W
R174	1-216-001-00	(BD)...METAL GLAZE 10 5% 1/10W
R201	1-249-441-11	CARBON 100K 5% 1/4W
R202	1-249-441-11	CARBON 100K 5% 1/4W
R203	1-249-422-11	CARBON 2.7K 5% 1/4W
R204	1-249-422-11	CARBON 2.7K 5% 1/4W
R205	1-249-437-11	CARBON 47K 5% 1/4W
R206	1-249-437-11	CARBON 47K 5% 1/4W
R207	1-249-437-11	CARBON 47K 5% 1/4W
R208	1-249-437-11	CARBON 47K 5% 1/4W
R209	1-249-429-11	CARBON 10K 5% 1/4W
R210	1-249-437-11	CARBON 47K 5% 1/4W
R211	1-249-423-11	CARBON 3.3K 5% 1/4W
R212	1-249-423-11	CARBON 3.3K 5% 1/4W
R213	1-249-429-11	CARBON 10K 5% 1/4W
R214	1-249-437-11	CARBON 47K 5% 1/4W
R215	1-249-429-11	CARBON 10K 5% 1/4W
R216	1-249-441-11	CARBON 100K 5% 1/4W
R217	1-249-411-11	CARBON 330 5% 1/4W
R218	1-249-411-11	CARBON 330 5% 1/4W
R219	1-249-417-11	CARBON 1K 5% 1/4W
R220	1-249-421-11	CARBON 2.2K 5% 1/4W

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R221	1-249-409-11	CARBON	220	5%	1/4W
R222	1-249-409-11	CARBON	220	5%	1/4W
R223	1-249-437-11	CARBON	47K	5%	1/4W
R224	1-249-437-11	CARBON	47K	5%	1/4W
R225	1-249-437-11	CARBON	47K	5%	1/4W
R226	1-249-437-11	CARBON	47K	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W
R232	1-249-425-11	CARBON	4.7K	5%	1/4W
R233	1-249-429-11	CARBON	10K	5%	1/4W
R234	1-249-393-11	CARBON	10	5%	1/4W
R235	1-249-417-11	CARBON	1K	5%	1/4W
R236	1-249-417-11	CARBON	1K	5%	1/4W
R237	1-249-419-11	CARBON	1.5K	5%	1/4W
R238	1-249-419-11	CARBON	1.5K	5%	1/4W
R239	1-249-433-11	CARBON	22K	5%	1/4W
R241	1-249-413-11	CARBON	470	5%	1/4W
R242	1-249-417-11	CARBON	1K	5%	1/4W
R243	1-249-411-11	CARBON	330	5%	1/4W
R244	1-249-411-11	CARBON	330	5%	1/4W
R245	1-249-421-11	CARBON	2.2K	5%	1/4W
R247	1-249-433-11	CARBON	22K	5%	1/4W
R248	1-249-421-11	CARBON	2.2K	5%	1/4W
R249	1-249-437-11	CARBON	47K	5%	1/4W
R250	1-249-429-11	CARBON	10K	5%	1/4W
R286	1-249-405-11	CARBON	100	5%	1/4W
R287	1-249-405-11	CARBON	100	5%	1/4W
R288	1-249-405-11	CARBON	100	5%	1/4W
R289	1-249-405-11	CARBON	100	5%	1/4W
R290	1-249-405-11	CARBON	100	5%	1/4W
R291	1-249-413-11	CARBON	470	5%	1/4W
R292	1-249-413-11	CARBON	470	5%	1/4W
R293	1-249-413-11	CARBON	470	5%	1/4W
R294	1-249-413-11	CARBON	470	5%	1/4W
R295	1-249-413-11	CARBON	470	5%	1/4W
R296	1-249-413-11	CARBON	470	5%	1/4W
R297	1-249-413-11	CARBON	470	5%	1/4W
R298	1-249-413-11	CARBON	470	5%	1/4W
R299	1-249-441-11	CARBON	100K	5%	1/4W
R301	1-249-407-11	CARBON	150	5%	1/4W
R302	1-249-411-11	CARBON	330	5%	1/4W
R303	1-249-411-11	CARBON	330	5%	1/4W
R304	1-249-407-11	CARBON	150	5%	1/4W
R305	1-249-411-11	CARBON	330	5%	1/4W
R306	1-249-412-11	CARBON	390	5%	1/4W
R307	1-249-416-11	CARBON	820	5%	1/4W
R308	1-249-412-11	CARBON	390	5%	1/4W
R309	1-249-411-11	CARBON	330	5%	1/4W
R310	1-247-832-11	CARBON	1.1K	5%	1/4W
R311	1-249-417-11	CARBON	1K	5%	1/4W
R312	1-249-420-11	CARBON	1.8K	5%	1/4W
R313	1-249-424-11	CARBON	3.9K	5%	1/4W
R314	1-249-407-11	CARBON	150	5%	1/4W
R315	1-249-409-11	CARBON	220	5%	1/4W
R316	1-249-411-11	CARBON	330	5%	1/4W
R317	1-247-832-11	CARBON	1.1K	5%	1/4W
R318	1-249-417-11	CARBON	1K	5%	1/4W
R319	1-249-426-11	CARBON	5.6K	5%	1/4W

Ref.No.	Part No.	Description			
R320	1-249-430-11	CARBON	12K	5%	1/4W
R401	1-249-417-11	CARBON	1K	5%	1/4W
R402	1-249-441-11	CARBON	100K	5%	1/4W
R403	1-249-441-11	CARBON	100K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-400-11	CARBON	47	5%	1/4W
R406	1-249-429-11	CARBON	10K	5%	1/4W
R416	1-249-425-11	CARBON	4.7K	5%	1/4W
R417	1-249-425-11	CARBON	4.7K	5%	1/4W
R418	1-249-425-11	CARBON	4.7K	5%	1/4W
R419	1-249-417-11	CARBON	1K	5%	1/4W
R426	1-249-417-11	CARBON	1K	5%	1/4W
R427	1-249-441-11	CARBON	100K	5%	1/4W
R428	1-247-903-00	CARBON	1M	5%	1/4W
R429	1-249-417-11	CARBON	1K	5%	1/4W
R430	1-249-425-11	CARBON	4.7K	5%	1/4W
R431	1-249-425-11	CARBON	4.7K	5%	1/4W
R432	1-249-429-11	CARBON	10K	5%	1/4W
R451	1-249-417-11	CARBON	1K	5%	1/4W
R452	1-249-441-11	CARBON	100K	5%	1/4W
R453	1-249-441-11	CARBON	100K	5%	1/4W
R454	1-249-425-11	CARBON	4.7K	5%	1/4W
R455	1-249-400-11	CARBON	47	5%	1/4W
R456	1-249-429-11	CARBON	10K	5%	1/4W
R457	1-249-429-11	CARBON	10K	5%	1/4W
R466	1-249-425-11	CARBON	4.7K	5%	1/4W
R467	1-249-425-11	CARBON	4.7K	5%	1/4W
R468	1-249-425-11	CARBON	4.7K	5%	1/4W
R469	1-249-417-11	CARBON	1K	5%	1/4W
R471	1-249-429-11	CARBON	10K	5%	1/4W
R472	1-249-411-11	CARBON	330	5%	1/4W
R473	1-249-441-11	CARBON	100K	5%	1/4W
R474	1-249-411-11	CARBON	330	5%	1/4W
R475	1-249-441-11	CARBON	100K	5%	1/4W
R486	1-249-413-11	CARBON	470	5%	1/4W
R487	1-249-429-11	CARBON	10K	5%	1/4W
R501	1-247-903-00	CARBON	1M	5%	1/4W
R502	1-249-425-11	CARBON	4.7K	5%	1/4W
R503	1-249-441-11	CARBON	100K	5%	1/4W
R504	1-247-903-00	CARBON	1M	5%	1/4W
R505	1-249-419-11	CARBON	1.5K	5%	1/4W
R506	1-249-434-11	CARBON	27K	5%	1/4W
R507	1-247-903-00	CARBON	1M	5%	1/4W
R522	1-249-409-11	CARBON	220	5%	1/4W
R523	1-249-409-11	CARBON	220	5%	1/4W
R524	1-249-439-11	CARBON	68K	5%	1/4W
R525	1-249-417-11	CARBON	1K	5%	1/4W
R526	1-249-405-11	CARBON	100	5%	1/4W
R527	1-249-405-11	CARBON	100	5%	1/4W
R528	1-249-405-11	CARBON	100	5%	1/4W
R529	1-249-405-11	CARBON	100	5%	1/4W
R531	1-249-405-11	CARBON	100	5%	1/4W
R530	1-249-405-11	CARBON	100	5%	1/4W
R532	1-249-405-11	CARBON	100	5%	1/4W
R533	1-249-405-11	CARBON	100	5%	1/4W
R534	1-249-405-11	CARBON	100	5%	1/4W
R535	1-249-405-11	CARBON	100	5%	1/4W

Ref.No.	Part No.	Description			
R536	1-249-405-11	CARBON	100	5%	1/4W
R537	1-249-429-11	CARBON	10K	5%	1/4W
R538	1-249-405-11	CARBON	100	5%	1/4W
R539	1-249-441-11	CARBON	100K	5%	1/4W
R540	1-249-441-11	CARBON	100K	5%	1/4W
R541	1-249-441-11	CARBON	100K	5%	1/4W
R542	1-249-441-11	CARBON	100K	5%	1/4W
R543	1-249-441-11	CARBON	100K	5%	1/4W
R551	1-247-903-00	CARBON	1M	5%	1/4W
R552	1-249-425-11	CARBON	4.7K	5%	1/4W
R553	1-249-441-11	CARBON	100K	5%	1/4W
R554	1-247-903-00	CARBON	1M	5%	1/4W
R555	1-249-419-11	CARBON	1.5K	5%	1/4W
R556	1-249-434-11	CARBON	27K	5%	1/4W
R557	1-247-903-00	CARBON	1M	5%	1/4W
R559	1-249-429-11	CARBON	10K	5%	1/4W
R564	1-249-437-11	CARBON	47K	5%	1/4W
R568	1-249-433-11	CARBON	22K	5%	1/4W
R569	1-249-429-11	CARBON	10K	5%	1/4W
R570	1-249-417-11	CARBON	1K	5%	1/4W
R571	1-249-441-11	CARBON	100K	5%	1/4W
R572	1-247-891-00	CARBON	330K	5%	1/4W
R573	1-249-425-11	CARBON	4.7K	5%	1/4W
R574	1-249-441-11	CARBON	100K	5%	1/4W
R576	1-249-395-11	CARBON	15	5%	1/4W
R577	1-249-405-11	CARBON	100	5%	1/4W
R578	1-247-903-00	CARBON	1M	5%	1/4W
R579	1-249-432-11	CARBON	18K	5%	1/4W
R580	1-249-441-11	CARBON	100K	5%	1/4W
R581	1-249-441-11	CARBON	100K	5%	1/4W
R582	1-249-417-11	CARBON	1K	5%	1/4W
R583	1-249-441-11	CARBON	100K	5%	1/4W
R584	1-249-417-11	CARBON	1K	5%	1/4W
R585	1-249-429-11	CARBON	10K	5%	1/4W
R586	1-249-429-11	CARBON	10K	5%	1/4W
R587	1-249-429-11	CARBON	10K	5%	1/4W
R588	1-249-429-11	CARBON	10K	5%	1/4W
R589	1-249-417-11	CARBON	1K	5%	1/4W
R590	1-249-417-11	CARBON	1K	5%	1/4W
R591	1-249-441-11	CARBON	100K	5%	1/4W
R592	1-249-441-11	CARBON	100K	5%	1/4W
R593	1-249-441-11	CARBON	100K	5%	1/4W
R594	1-249-441-11	CARBON	100K	5%	1/4W
R595	1-249-437-11	CARBON	47K	5%	1/4W
R596	1-249-429-11	CARBON	10K	5%	1/4W
R597	1-249-417-11	CARBON	1K	5%	1/4W
R598	1-249-411-11	CARBON	330	5%	1/4W
R601	1-249-420-11	CARBON	1.8K	5%	1/4W
R602	1-247-887-00	CARBON	220K	5%	1/4W
R604	1-249-418-11	CARBON	1.2K	5%	1/4W
R605	1-249-441-11	CARBON	100K	5%	1/4W
R606	1-249-441-11	CARBON	100K	5%	1/4W
R609	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-441-11	CARBON	100K	5%	1/4W
R611	1-249-441-11	CARBON	100K	5%	1/4W
R612	1-249-441-11	CARBON	100K	5%	1/4W
R613	1-249-441-11	CARBON	100K	5%	1/4W

Ref.No.	Part No.	Description			
R614	1-249-441-11	CARBON	100K	5%	1/4W
R615	1-249-441-11	CARBON	100K	5%	1/4W
R616	1-249-429-11	CARBON	10K	5%	1/4W
R617	1-249-429-11	CARBON	10K	5%	1/4W
R618	1-249-428-11	CARBON	8.2K	5%	1/4W
R619	1-249-423-11	CARBON	3.3K	5%	1/4W
R620	1-249-417-11	CARBON	1K	5%	1/4W
R621	1-249-417-11	CARBON	1K	5%	1/4W
R622	1-249-429-11	CARBON	10K	5%	1/4W
R623	1-249-429-11	CARBON	10K	5%	1/4W
R624	1-247-864-11	CARBON	24K	5%	1/4W
R651	1-249-420-11	CARBON	1.8K	5%	1/4W
R652	1-247-887-00	CARBON	220K	5%	1/4W
R654	1-249-418-11	CARBON	1.2K	5%	1/4W
R655	1-249-441-11	CARBON	100K	5%	1/4W
R656	1-249-441-11	CARBON	100K	5%	1/4W
R661	1-249-425-11	CARBON	4.7K	5%	1/4W
R662	1-249-425-11	CARBON	4.7K	5%	1/4W
R663	1-249-425-11	CARBON	4.7K	5%	1/4W
R664	1-249-425-11	CARBON	4.7K	5%	1/4W
R665	1-249-437-11	CARBON	47K	5%	1/4W
R666	1-249-437-11	CARBON	47K	5%	1/4W
R667	1-249-437-11	CARBON	47K	5%	1/4W
R668	1-247-895-00	CARBON	470K	5%	1/4W
R669	1-247-895-00	CARBON	470K	5%	1/4W
R670	1-249-421-11	CARBON	2.2K	5%	1/4W
R671	1-249-421-11	CARBON	2.2K	5%	1/4W
R672	1-249-421-11	CARBON	2.2K	5%	1/4W
R673	1-249-417-11	CARBON	1K	5%	1/4W
R674	1-249-423-11	CARBON	3.3K	5%	1/4W
R675	1-249-426-11	CARBON	5.6K	5%	1/4W
R676	1-249-429-11	CARBON	10K	5%	1/4W
R677	1-249-429-11	CARBON	10K	5%	1/4W
R678	1-249-429-11	CARBON	10K	5%	1/4W
R679	1-249-429-11	CARBON	10K	5%	1/4W
R680	1-249-429-11	CARBON	10K	5%	1/4W
R681	1-249-421-11	CARBON	2.2K	5%	1/4W
R682	1-249-421-11	CARBON	2.2K	5%	1/4W
R683	1-249-421-11	CARBON	2.2K	5%	1/4W
R684	1-249-421-11	CARBON	2.2K	5%	1/4W
R685	1-249-421-11	CARBON	2.2K	5%	1/4W
R686	1-249-405-11	CARBON	100	5%	1/4W
R687	1-249-429-11	CARBON	10K	5%	1/4W
R688	1-247-903-00	CARBON	1M	5%	1/4W
R689	1-249-429-11	CARBON	10K	5%	1/4W
R690	1-249-429-11	CARBON	10K	5%	1/4W
R702	1-249-431-11	CARBON	15K	5%	1/4W
R703	1-249-437-11	CARBON	47K	5%	1/4W
R704	1-249-422-11	(US,Canadian) ...CARBON	2.7K	5%	1/4W
R704	1-249-426-11	(EXCEPT FOR US,Canadian) ...CARBON	5.6K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R707	1-249-437-11	CARBON	47K	5%	1/4W
R708	1-249-437-11	CARBON	47K	5%	1/4W

Ref.No.	Part No.	Description				
R709	1-249-421-11	CARBON	2.2K	5%	1/4W	
R710	1-249-421-11	CARBON	2.2K	5%	1/4W	
R712	1-249-425-11	CARBON	4.7K	5%	1/4W	
R713	1-249-426-11	CARBON	5.6K	5%	1/4W	
R731	1-249-417-11	(AEP,UK,WG,IT) ...CARBON	1K	5%	1/4W	
R731	1-249-425-11	(US,Canadian,E,EA,AUS) ...CARBON	4.7K	5%	1/4W	
R732	1-249-437-11	CARBON	47K	5%	1/4W	
R733	1-249-437-11	(AEP,UK,WG,IT) ...CARBON	47K	5%	1/4W	
R734	1-247-897-11	(AEP,UK,WG,IT) ...CARBON	560K	5%	1/4W	
R735	1-249-417-11	(AEP,UK,WG,IT) ...CARBON	1K	5%	1/4W	
R737	1-249-437-11	(AEP,UK,WG,IT) ...CARBON	47K	5%	1/4W	
R738	1-249-425-11	CARBON	4.7K	5%	1/4W	
R740	1-249-425-11	CARBON	4.7K	5%	1/4W	
R742	1-249-405-11	CARBON	100	5%	1/4W	
R744	1-249-429-11	CARBON	10K	5%	1/4W	
R745	1-249-429-11	CARBON	10K	5%	1/4W	
R746	1-249-429-11	CARBON	10K	5%	1/4W	
R747	1-249-405-11	CARBON	100	5%	1/4W	
R748	1-249-405-11	CARBON	100	5%	1/4W	
R752	1-249-431-11	CARBON	15K	5%	1/4W	
R753	1-249-437-11	CARBON	47K	5%	1/4W	
R754	1-249-422-11	(US,Canadian) ...CARBON	2.7K	5%	1/4W	
R754	1-249-426-11	(EXCEPT FOR US,Canadian) ...CARBON	5.6K	5%	1/4W	
R755	1-249-429-11	CARBON	10K	5%	1/4W	
R757	1-249-437-11	CARBON	47K	5%	1/4W	
R758	1-249-437-11	CARBON	47K	5%	1/4W	
R759	1-249-421-11	CARBON	2.2K	5%	1/4W	
R760	1-249-421-11	CARBON	2.2K	5%	1/4W	
R762	1-249-425-11	CARBON	4.7K	5%	1/4W	
R763	1-249-426-11	CARBON	5.6K	5%	1/4W	
R771	1-249-429-11	CARBON	10K	5%	1/4W	
R772	1-249-429-11	CARBON	10K	5%	1/4W	
R773	1-247-870-11	CARBON	43K	5%	1/4W	
R774	1-249-437-11	CARBON	47K	5%	1/4W	
R775	1-249-437-11	CARBON	47K	5%	1/4W	
R776	1-249-437-11	CARBON	47K	5%	1/4W	
R781	1-249-417-11	(AEP,UK,WG,IT) ...CARBON	1K	5%	1/4W	
R781	1-249-425-11	(US,Canadian,E,EA,AUS) ...CARBON	4.7K	5%	1/4W	
R782	1-249-437-11	CARBON	47K	5%	1/4W	
R783	1-249-437-11	(AEP,UK,WG,IT) ...CARBON	47K	5%	1/4W	
R784	1-247-897-11	(AEP,UK,WG,IT) ...CARBON	560K	5%	1/4W	
R785	1-249-417-11	(AEP,UK,WG,IT) ...CARBON	1K	5%	1/4W	
R787	1-249-437-11	(AEP,UK,WG,IT) ...CARBON	47K	5%	1/4W	
R788	1-249-425-11	CARBON	4.7K	5%	1/4W	
R790	1-249-425-11	CARBON	4.7K	5%	1/4W	
R791	1-249-417-11	CARBON	1K	5%	1/4W	
R792	1-249-411-11	CARBON	330	5%	1/4W	

Ref.No.	Part No.	Description				
R794A	1-249-414-11	CARBON	560	5%	1/4W	
R794B	1-249-433-11	(AEP,UK,WG,IT) ...CARBON	22K	5%	1/4W	
R795	1-249-435-11	(AEP,UK,WG,IT) ...CARBON	33K	5%	1/4W	
R801	1-249-417-11	CARBON	1K	5%	1/4W	
R802	1-249-438-11	CARBON	56K	5%	1/4W	
R803	1-249-413-11	CARBON	470	5%	1/4W	
R804	1-249-438-11	CARBON	56K	5%	1/4W	
R805	1-249-389-11	CARBON	4.7	5%	1/4W	
R851	1-249-417-11	CARBON	1K	5%	1/4W	
R852	1-249-438-11	CARBON	56K	5%	1/4W	
R853	1-249-413-11	CARBON	470	5%	1/4W	
R854	1-249-438-11	CARBON	56K	5%	1/4W	
R855	1-249-389-11	CARBON	4.7	5%	1/4W	
R856	1-249-417-11	CARBON	1K	5%	1/4W	
R871	1-249-429-11	CARBON	10K	5%	1/4W	
R872	1-249-437-11	CARBON	47K	5%	1/4W	
R873	1-249-429-11	CARBON	10K	5%	1/4W	
R874	1-247-883-00	CARBON	150K	5%	1/4W	
R875	1-249-421-11	CARBON	2.2K	5%	1/4W	
R876	1-249-421-11	CARBON	2.2K	5%	1/4W	
R877	⚠.1-212-881-11	FUSIBLE	100	5%	1/4W	F
R878	1-249-417-11	CARBON	1K	5%	1/4W	
R879	1-249-417-11	CARBON	1K	5%	1/4W	
R880	⚠.1-212-881-11	FUSIBLE	100	5%	1/4W	F
R881	1-249-421-11	CARBON	2.2K	5%	1/4W	
R882	1-249-421-11	CARBON	2.2K	5%	1/4W	
R883	⚠.1-212-881-11	FUSIBLE	100	5%	1/4W	F
R901	1-249-419-11	CARBON	1.5K	5%	1/4W	
R902	1-249-429-11	CARBON	10K	5%	1/4W	
R903	1-249-421-11	CARBON	2.2K	5%	1/4W	
R904	1-249-433-11	CARBON	22K	5%	1/4W	
R905	⚠.1-212-934-00	(Except for US, Canadian) ...FUSIBLE	1	5%	1/2W	F
R905	⚠ 1-212-942-00	(US,Canadian) ...FUSIBLE	2.2	5%	1/2W	F
R906	⚠.1-212-934-00	FUSIBLE	1	5%	1/2W	F
R907	⚠.1-212-934-00	(Except for US, Canadian) ...FUSIBLE	1	5%	1/2W	F
R907	⚠1-212-942-00	(US,Canadian) ...FUSIBLE	2.2	5%	1/2W	F
R908	1-249-425-11	CARBON	4.7K	5%	1/4W	
R909	1-249-433-11	CARBON	22K	5%	1/4W	
R910	1-247-903-00	CARBON	1M	5%	1/4W	
R911	1-249-405-11	CARBON	100	5%	1/4W	
R912	1-249-432-11	CARBON	18K	5%	1/4W	
R913	1-249-432-11	CARBON	18K	5%	1/4W	
R914	1-247-842-11	CARBON	3K	5%	1/4W	
R915	1-249-429-11	CARBON	10K	5%	1/4W	
R917	1-249-413-11	CARBON	470	5%	1/4W	
R926	1-202-725-00	(US,Canadian) ...SOLID	3.3M	10%	1/2W	
RB502	1-233-206-11	COMPOSITION CIRCUIT BLOCK (100KX13)				
RV41A	1-228-989-00	RES, ADJ, CARBON 470				
RV41B	1-228-989-00	RES, ADJ, CARBON 470				
RV42B	1-230-500-11	RES, ADJ, CARBON 220K				
RV61A	1-228-989-00	RES, ADJ, CARBON 470				
RV61B	1-228-989-00	RES, ADJ, CARBON 470				
RV62B	1-230-500-11	RES, ADJ, CARBON 220K				

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
RV81	1-238-017-11	RES, ADJ, CARBON 22K
RV82	1-238-017-11	RES, ADJ, CARBON 22K
RV101	1-238-016-11	(BD)...RES, ADJ, CARBON 10K
RV102	1-238-016-11	(BD)...RES, ADJ, CARBON 10K
RV406	1-238-865-11	RES, VAR, CARBON (MOTOR)100KX2 (VOLUME)(INCLUDING VOL LED)
RV501	1-238-866-11	RES, VAR, SLIDE 250KX2 (12kHz)
RV502	1-238-866-11	RES, VAR, SLIDE 250KX2 (4kHz)
RV503	1-238-866-11	RES, VAR, SLIDE 250KX2 (1kHz)
RV504	1-238-866-11	RES, VAR, SLIDE 250KX2 (400Hz)
RV505	1-238-866-11	RES, VAR, SLIDE 250KX2 (100Hz)
RV701	1-238-017-11	RES, ADJ, CARBON 22K
RV751	1-238-017-11	RES, ADJ, CARBON 22K
RY81B	1-515-614-11	RELAY
S11A	1-571-281-21	SWITCH, LEAF (HELF)
S11B	1-571-281-21	SWITCH, LEAF (HELF)
S12B	1-571-281-21	SWITCH, LEAF (REC(A))
S13B	1-571-281-21	SWITCH, LEAF (REC(B))
S14A	1-571-281-21	SWITCH, LEAF (CrO2)
S14B	1-571-281-21	SWITCH, LEAF (CrO2)
S15B	1-571-281-21	SWITCH, LEAF
S101	1-572-085-11	(BD)...SWITCH, LEAF (LIMIT IN)
S201	1-572-184-11	SWITCH, KEYBOARD (EDIT)
S202	1-572-184-11	SWITCH, KEYBOARD (■)
S203	1-572-184-11	SWITCH, KEYBOARD (▶II)
S204	1-572-184-11	SWITCH, KEYBOARD (⏏OPEN/CLOSE)
S205	1-572-184-11	SWITCH, KEYBOARD (▶▶I)
S206	1-572-184-11	SWITCH, KEYBOARD (I◀◀)
S207	1-572-184-11	SWITCH, KEYBOARD (▶▶)
S208	1-572-184-11	SWITCH, KEYBOARD (◀◀)
S209	1-572-184-11	SWITCH, KEYBOARD (REPEAT)
S210	1-572-184-11	SWITCH, KEYBOARD (CONTINUE)
S211	1-572-184-11	SWITCH, KEYBOARD (SHUFFLE)
S212	1-572-184-11	SWITCH, KEYBOARD (PROGRAM)
S214	1-572-184-11	SWITCH, KEYBOARD (TIME)
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)
S301	1-572-184-11	(DECK A)...SWITCH, KEYBOARD (■)
S302	1-572-184-11	(DECK A)...SWITCH, KEYBOARD (◀◀)
S303	1-572-184-11	(DECK A)...SWITCH, KEYBOARD (◀)
S304	1-572-184-11	(DECK A)...SWITCH, KEYBOARD (▶)
S305	1-572-184-11	(DECK A)...SWITCH, KEYBOARD (▶▶)
S306	1-572-184-11	(DECK B)...SWITCH, KEYBOARD (■)
S307	1-572-184-11	(DECK B)...SWITCH, KEYBOARD (◀◀)
S308	1-572-184-11	(DECK B)...SWITCH, KEYBOARD (◀)
S309	1-572-184-11	(DECK B)...SWITCH, KEYBOARD (▶)
S310	1-572-184-11	(DECK B)...SWITCH, KEYBOARD (▶▶)
S311	1-572-184-11	SWITCH, KEYBOARD (AMS/BLK SKIP)
S312	1-572-184-11	SWITCH, KEYBOARD (TAPE DUBBING HIGH SPEED)
S313	1-572-184-11	SWITCH, KEYBOARD (CD SYNCHRO)
S314	1-572-184-11	SWITCH, KEYBOARD (REC)
S315	1-572-184-11	SWITCH, KEYBOARD (PAUSE)
S351	1-570-849-11	SWITCH, SLIDE (DOLBY NR)
S352	1-570-837-11	SWITCH, SLIDE (DIRECTION MODE)
S501	1-572-184-11	SWITCH, KEYBOARD (TIMER CONTROL)

Ref.No.	Part No.	Description
S502	1-572-184-11	SWITCH, KEYBOARD (SLEEP)
S503	1-572-184-11	SWITCH, KEYBOARD (TIMER SET)
S504	1-572-184-11	SWITCH, KEYBOARD (CLOCK SET)
S505	1-572-184-11	SWITCH, KEYBOARD (CLOCK DISPLAY)
S506	1-572-184-11	SWITCH, KEYBOARD (POWER)
S507	1-572-184-11	(US,Canadian,E,EA,AUS) ...SWITCH, KEYBOARD (SAT)
S507	1-572-184-11	(AEP,UK,WG,IT) ...SWITCH, KEYBOARD (DBFB)
S508	1-572-184-11	SWITCH, KEYBOARD (SURROUND)
S509	1-572-184-11	SWITCH, KEYBOARD (TAPE)
S510	1-572-184-11	SWITCH, KEYBOARD (CD)
S511	1-572-184-11	SWITCH, KEYBOARD (TUNER)
S512	1-572-184-11	(US,Canadian,E,EA,AUS) ...SWITCH, KEYBOARD (VIDEO/AUX)
S512	1-572-184-11	(AEP,UK,WG,IT) ...SWITCH, KEYBOARD (PHONO)
S513	1-572-184-11	SWITCH, KEYBOARD (BAND)
S514	1-572-184-11	SWITCH, KEYBOARD (TUNING -)
S515	1-572-184-11	SWITCH, KEYBOARD (TUNING +)
S516	1-572-184-11	SWITCH, KEYBOARD (AUTO)
S517	1-572-184-11	SWITCH, KEYBOARD (MEMORY)
S518	1-572-184-11	SWITCH, KEYBOARD (NEXT ENTER)
S519	1-572-184-11	(US,Canadian,E,EA,AUS) ...SWITCH, KEYBOARD (ST/MUTE)
S519	1-572-184-11	(AEP,UK,WG,IT) ...SWITCH, KEYBOARD (DUAL)
S520	1-572-184-11	SWITCH, KEYBOARD (SHIFT)
S521	1-572-184-11	SWITCH, KEYBOARD (PRESET/TIMER -)
S522	1-572-184-11	SWITCH, KEYBOARD (PRESET/TIMER +)
S701	1-572-185-11	(AEP,UK,WG,IT)...SWITCH, SLIDE (ISS)
S702	1-554-088-00	SWITCH, KEY BOARD
S901	⚠1-571-722-11	(E,EA,AUS)...SWITCH, VOLTAGE SELECTION (VOLTAGE SELECTOR)
T1	1-402-424-11	(E,EA,AUS)...COIL (ANT,SW3)
T2	1-406-346-11	(E,EA,AUS)...COIL (OSC,SW3)
T81B	1-433-337-11	TRANSFORMER, BIAS OSCILLATION
T901	⚠1-449-898-11	(E,EA,AUS).......TRANSFORMER, POWER
T901	⚠1-449-899-11	(AEP,UK,WG,IT)...TRANSFORMER, POWER
T901	⚠1-449-900-11	(US,Canadian)....TRANSFORMER, POWER
TB1	*1-537-138-31	(WG,IT)...TERMINAL BOARD (ANTENNA)
TB1	*1-537-238-21	(EXCEPT FOR WG,IT)...TERMINAL BOARD (ANTENNA)
TB801	1-537-238-11	TERMINAL BOARD (SPEAKER)
TP81	*1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P
TP601	*1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P
TP701	*1-568-449-11	HOUSING, CONNECTOR (PC BOARD) 3P
TP702	*1-568-449-11	(AEP,UK,WG,IT)...HOUSING, CONNECTOR (PC BOARD) 3P
X51	1-577-126-11	VIBRATOR, CRYSTAL
X81	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)
X201	1-577-358-21	VIBRATOR, CERAMIC (4MHz)
X251	1-567-908-11	VIBRATOR, CRYSTAL (16.9344MHz)
X501	1-567-821-21	VIBRATOR, CRYSTAL (4.19MHz)
X502	1-527-997-31	VIBRATOR, CRYSTAL (32kHz)
X601	1-577-358-21	VIBRATOR, CERAMIC (4MHz)

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ACCESSORY & PACKING MATERIAL

1-465-342-11	REMOTE COMMANDER (RM-S100)
2-181-754-01	COVER, BATTERY
1-501-369-11	(1500:AEP,UK,IT)...ANTENNA (FM)
1-501-374-11	ANTENNA, LOOP
⚠1-506-401-31	(EA)......ADAPTOR, CONVERSION
⚠1-526-565-00	(E)...AC PLUG ADAPTOR
⚠1-555-074-00	(AUS)...........CORD, POWER
⚠1-555-234-00	(AEP,WG,IT,EA)...CORD, POWER
⚠1-556-280-00	(E).............CORD, POWER
⚠1-558-032-11	(UK).............CORD, POWER
⚠1-575-706-00	(US,Canadian)....CORD, POWER
3-751-615-11	(AEP,UK,E,EA,AUS)...MANUAL, INSTRUCTION
3-751-615-21	(US,Canadian).......MANUAL, INSTRUCTION
3-751-615-41	(AEP,WG,IT).........MANUAL, INSTRUCTION
*4-936-852-01	CUSHION (LOWER)(HCD)
*4-936-853-01	CUSHION (UPPER)(HCD)
*4-936-862-01	(H7:AEP,WG,IT)...INDIVIDUAL CARTON (FH)
*4-936-863-01	(H7:E,EA)........INDIVIDUAL CARTON (FH)
*4-936-864-01	(H1500:EXCEPT UK) ...INDIVIDUAL CARTON (MHC)
*4-936-865-01	(H1500:UK).......INDIVIDUAL CARTON

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Sony Corporation
Audio Group

English
90E0487-1
Printed in Japan
© 1990. 5

Published by Customer Relations and Service Group

HCD-H7/H1500

SONY
SERVICE MANUAL

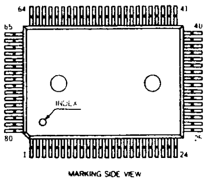
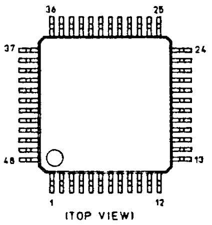
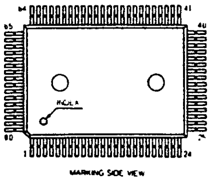
US Model
Canadian Model
AEP Model
UK Model
HCD-H1500

AEP Model
E Model
HCD-H7

CORRECTION-1

Correct your service manual as shown below.

☛: indicates corrected portion.

Page	INCORRECT	CORRECT
5	1. Laser Diode Properties • Material: GaAlAs • Wavelength: 780 mm • Emission Duration: continuous	1. Laser Diode Properties • Material: GaAlAs • Wavelength: 780 nm • Emission Duration: continuous
15	**E-F Balance Check** **Procedure :** 1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.	**E-F Balance Check** **Procedure :** 1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
16	**Focus/Tracking Gain Adjustment** **Procedure :** 1. 4. Adjustment RV101 on digital board so that the waveform is as shown in the figure below. (focus gain adjustment) 6. Adjusted MV102 on digital board so that the waveform is as shown the flgure below. (tracking gain adjustment)	**Focus/Tracking Gain Adjustment** **Procedure :** 1. 4. Adjustment RV102 on digital board so that the waveform is as shown in the figure below. (focus gain adjustment) 6. Adjusted RV101 on digital board so that the waveform is as shown the flgure below. (tracking gain adjustment)
17	**6-1. SEMICONDUCTOR LEAD LAYOUTS** **CXA1372Q** **CXD2500Q**  64 41 65 40 INDEX 80 25 1 24 MARKING SIDE VIEW	**6-1. SEMICONDUCTOR LEAD LAYOUTS** **CXA1372Q**  **CXD2500Q**  64 41 65 40 INDEX 80 25 1 24 MARKING SIDE VIEW

Page	INCORRECT				CORRECT			
	No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
50	903	*A-4334-168-A	(AUS)..........MOUNTED PCB, DISPLAY		903	*A-4334-168-A	(AUS)..........MOUNTED PCB, DISPLAY	
		*A-4334-169-A	(US,Canadian)...MOUNTED PCB, DISPLAY			*A-4334-169-A	(US,Canadian)...MOUNTED PCB, DISPLAY	
		*A-4334-170-A	(AEP,UK)........MOUNTED PCB, DISPLAY			*A-4334-170-A	(AEP,UK)........MOUNTED PCB, DISPLAY	
		*A-4334-171-A	(IT)............MOUNTED PCB, DISPLAY			*A-4334-171-A	(IT)............MOUNTED PCB, DISPLAY	
		*A-4334-172-A	(WG)............MOUNTED PCB, DISPLAY			*A-4334-172-A	(WG)............MOUNTED PCB, DISPLAY	
		*A-4334-178-A	(E,EA)..........MOUNTED PCB, DISPLAY			*A-4334-168-A	(E,EA)..........MOUNTED PCB, DISPLAY	

Sony Corporation
Audio Group

English
91E0492-1
Printed in Japan

© 1991. 5

Published by Customer Relations and Service Group

HCD-H7/H1500

SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
HCD-H1500

AEP Model
E Model
HCD-H7

CORRECTION-2

Correct your service manual as shown below.

☞ : indicates corrected portion.

Page	INCORRECT			CORRECT	
	No.	Part No.	Description	Part No.	Description
62	Q610	8-729-801-48	TRANSISTOR 2SB1013-4	8-729-801-84 ☞	TRANSISTOR 2SB1013-4

English
92E0492-1
Printed in Japan
© 1992.5
Published by Customer Relations and Service Group

Sony Corporation
Audio Group

HCD-H7/H1500

SONY®
SERVICE MANUAL

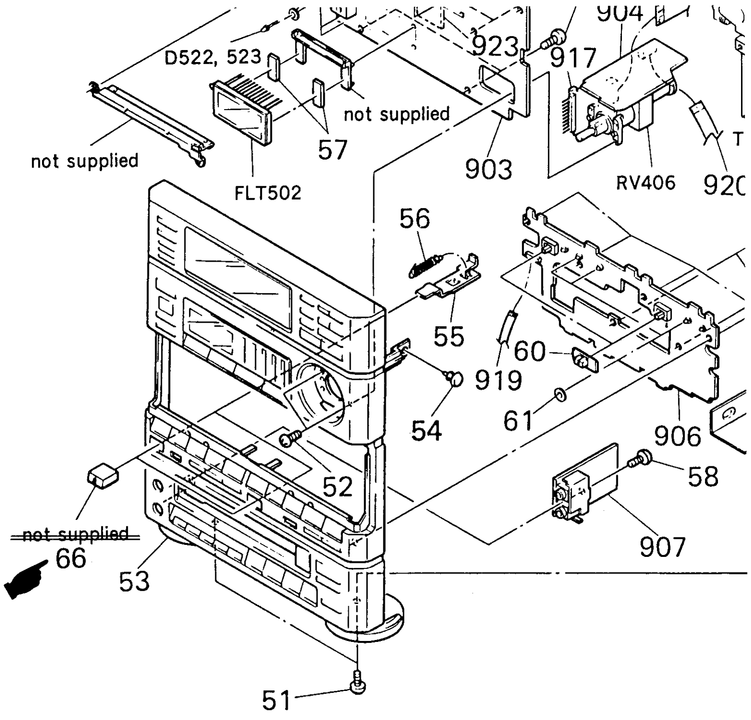
US Model
Canadian Model
AEP Model
UK Model
HCD-H1500

AEP Model
E Model
HCD-H7

CORRECTION-3

Correct your service manual as shown below.

☛ : indicates corrected portion.

Page	INCORRECT			CORRECT		
	No.	Part No.	Description	No.	Part No.	Description
	————			66	3-349-055-01	BUTTON (EJECT) ☛
50						
	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
50	903	*A-4334-168-A	(AUS) ···MOUNTED PCB, DISPLAY	903	*A-4334-168-A	☛ (E, EA, AUS)······MOUNTED PCB, DISPLAY
56		*A-4334-178-A	(E, EA)···MOUNTED PCB, DISPLAY	☛ ————		

D522, 523
923
904
917
not supplied
57
not supplied
903
RV406
92
T
FLT502
56
55
60
919
54
61
906
52
58
907
~~not supplied~~
☛ 66
53
51

English
93G0498-1D
Printed in Japan
© 1993. 7

Sony Corporation
Audio Group

Published by Audio Sector Quality Assurance Dept.